THE BUILDER

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HOLIDAY THOUGHTS AT THE SEASIDE.

IT is permissible that our holiday thoughts should be idle in the sense that there need be no finality to them. Like a volume of good essays they represent the whimsical introspections of the mind without seeking to instruct or draw logical deductions. The annual holiday rush to the seaside is a subject for psychologists; consequently, the study of sea-coast architecture and surroundings is an enigma to those who do not study psychology. As time goes on, we find seaside holiday resorts rapidly developing into places where a man may escape from himself, and it becomes evident that we have much to learn about the psychology of happiness in relation to environment. We find it difficult to treat the lighter phases of life with sympathy when we are unable to understand or appreciate the various ways in which different people derive happiness. Jaded nerves seek recuperation in indulging in various forms of restlessness, yet health may be restored idling by a river bank. Some people can be happy anywhere, others nowhere, and it is obvious that many are enjoying themselves according to certain settled principles—"laboriously doing nothing, or frantically doing something." We quote from an essay by an anonymous author: "I suppose the simpler the type of mind, the more easy will it find a way out of itself. One cannot doubt that the cheaper, commoner forms of amusement do succeed in their primary aim, which is to take their audience out of the world of their everyday work, or idleness, or care into an imaginary one where the other is forgotten. Obviously these entertainments would only bore minds of more subtlety, of keener perception, or more cultivated taste. Happily, there are different ways of escape for different types."

But even if the object is to seek forgetfulness for a time, we may be pardoned if we still fail to appreciate the Meccano toy-looking towers, big wheels, and acres of asphalte. When we see these miles of concrete promenades with their gas-tube handrails we are tempted to wonder whether the holiday-makers are as happy as they look in their search for health, or whether they are determined to be happy in spite of the conditions. To quote Mr. Robert Lynd: "Perhaps it is not so much that we feel gay as that we are afraid of feeling gloomy." Regardless of our holiday vows, we cannot help generalising by making distinctions between those who appreciate a quiet holiday amidst natural scenery, between those who choose a quiet little unspoilt fishing port, and those who cannot exist without their menageries, circuses, and dancing-halls. If we have a preference for the unspoilt seaside front, it is a tragedy when we consider it to be ruined when it attempts to satisfy those who prefer their endless marine drives and typical boarding houses fronting the promenade. Many of us have a sentimental regard for familiar things, and we resent somewhat the intrusions brought by a modern life which threatens to become too rapid for us. The quiet charm of the old stone pier and breakwater must give place to the usual modern pier—a hybrid of building construction and engineering, consecrated to a life of gaiety and pleasure. The local authority which published the sublime statement that "certain seaside towns are assisted by nature in their attempts to draw the public" was most likely guiltless of any attempt at unconscious humour. There is distinct humour, too, in this official observation: "But every decade the sea goes farther away, receding tides have from time to time left long stretches of sand, removing almost out of reach what to many is one of the chief attractions of a seaside place." The following guide-book quotations reveal the municipal outlook: "The day has long since passed since the seashore with its sand and shingle was deemed sufficient attraction for summer visitors"; and "the sea-front is broken up with artificial attractions, architectural and otherwise." To the unsympathetic looker-on the annual holiday seems to have developed into an annual business of joy-hunting, and the motley array of pleasure machines at some of our popular resorts indicates that the popularity of these places seems to depend upon the amount of fun which can be provided. The business of supplying excitement has been developed on the grand scale, until it is obvious that the pursuit of pleasure has become a pursuit of novel sensation, and as the demand of the pleasure-seekers is not so easily appeased enterprising corporations seem compelled to search for new inventions.

If we assume that the object is to create an atmosphere in which the prosaic conditions of our everyday lives can be temporarily forgotten, we may see some subtle idea lurking in the minds of those who select Oriental forms of architecture for pavilions, bandstands, and kiosks. Chinese, Indian, Moorish, and Saracenic *motifs* are the sources which seem to be most heavily drawn upon, and in the winter-time, when the places are deserted, we have only to look at the strange medley of onion-shaped domes to realise the strange artificial flame which burns for a brief period every year.

At many seaside pleasure towns, two distinct developments are to be seen—the uncompromising engineering work, with little or no imagination, and the tawdry architecture which appears to be all imagination. There seems to be too violent a contrast between the permanent solidity of the engineering work and the holiday mood of the architectural accessories. The hand of the Borough Engineer has often been heavy, and thousands of tons of concrete have been dumped around our coasts. The action of the sea probably allows little latitude for imagination, but when concrete promenades extend for miles surely something should be provided to relieve the monotony. To create the feeling of gaiety, too big a strain seems to be thrown upon the architecture, even with the aid of orchestral music and fairy lamps.

We have an idea that for a brief period each year holiday makers would derive benefit from well-designed surroundings, but all evidence goes to prove that education—even unconscious education—is not what the great mass of people desire on holiday. They desire to be "taken out of themselves," and they appreciate anything which conduces to this end. A seaside pleasure town, catering for a passing public, redecorates itself season by season, and it is obvious that this fact alone must affect the character and design of the buildings. A uniform style of architecture which symbolised our law courts and free libraries would, apparently, hold no illusion for the holiday-maker who is anxious to escape from himself. Nevertheless, this is no reason why seaside architecture should give the appearance of having been designed by the electrician for the sole object of carrying fairy lamps.

We are told that, whether in literature or art, every age favours the works dealing with phases of life and conditions different from those actually existing; and, further, if the delicate social balance were disturbed so that we became accustomed to the conditions which we once admired literature and art would hurry back to other ages for inspiration. This brings us to the startling thought that the architecture of illusion may some day cease to charm: and it is even possible that it will cease to have any illusion when it becomes so common that it will be accepted as a condition of everyday life at the seaside.

Mr. Holbrook Jackson, in one of his essays, refers to the books we mean to read on holiday at the seaside, and to the triumphant defeat of good resolutions as we doze under the awnings of the camp chairs. "When I see these happy people thus employed I know their holiday is doing them good, and I know that literature, neglected, though not despised, has aided and abetted the kindly gods of health." It would be generous to believe that seaside architecture had the same negative properties. It is difficult to imagine a form of architecture which could accommodate itself to this ephemeral phase of life, and it is possible that a holiday without architecture would make it more appreciated on our return to work. It was Mark Twain, we believe, "with that hidden wisdom which was always a part of his humour," who said that there was only one better way of spending a holiday than lying under a tree with a book, namely, to lie under a tree without a book.

We may not understand some of the manifestations of this restless life, but are still thankful that the sea and the sands remain, and that there are limits to municipal enterprises.

NOTES.

Tintern Abbey.

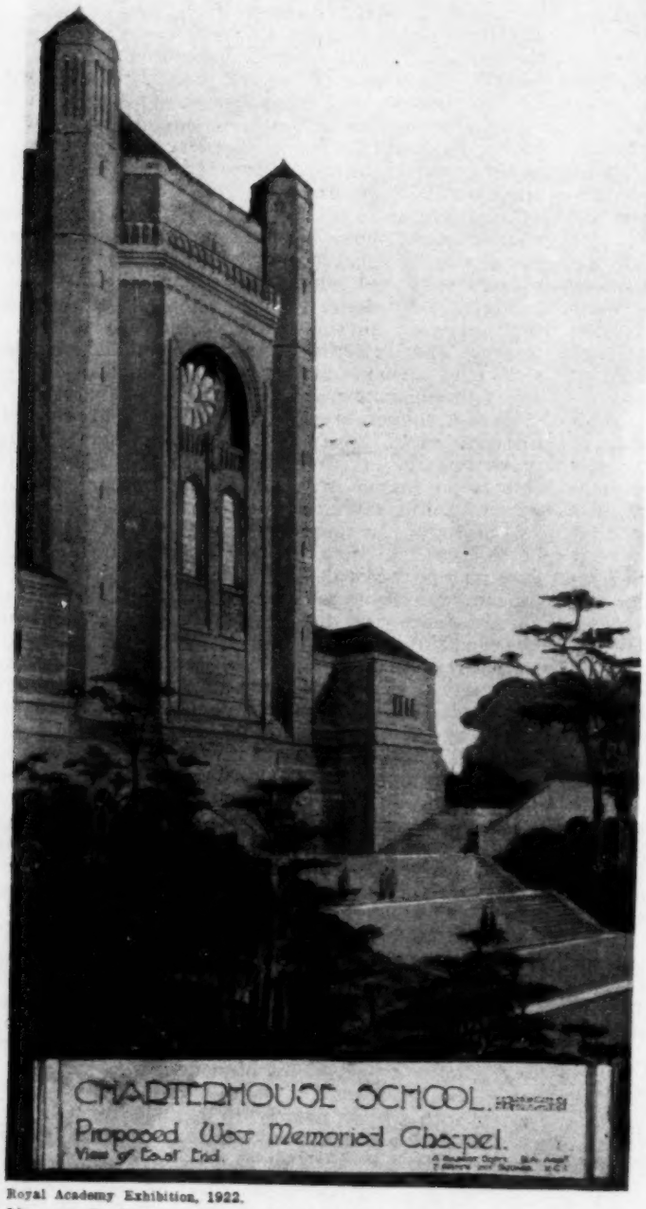
WE give in this issue an article by Mr. William Harvey on the repair of the ruins of Tintern Abbey by the Historic Building Branch of H.M. Office of Works. This work has recently been made the occasion of a great deal of comment, and the description should prove of interest to our readers. The drawings have been lent for publication by H.M. Office of Works, and indicate something of the thoughtful and patient methods adopted in attempting to uphold the shattered and overhanging masses of masonry. Study of the survey plan on page 244 will reveal the dangerous condition in which the ancient walls had been left. Movement is taking place in every part of the building, and the curious curved lines of the wall tops speak eloquently of impending collapse. It may be questioned whether the critics who have professed their disapproval of the introduction of reinforcement were aware of the serious nature of the problem.

Ancient Monuments.

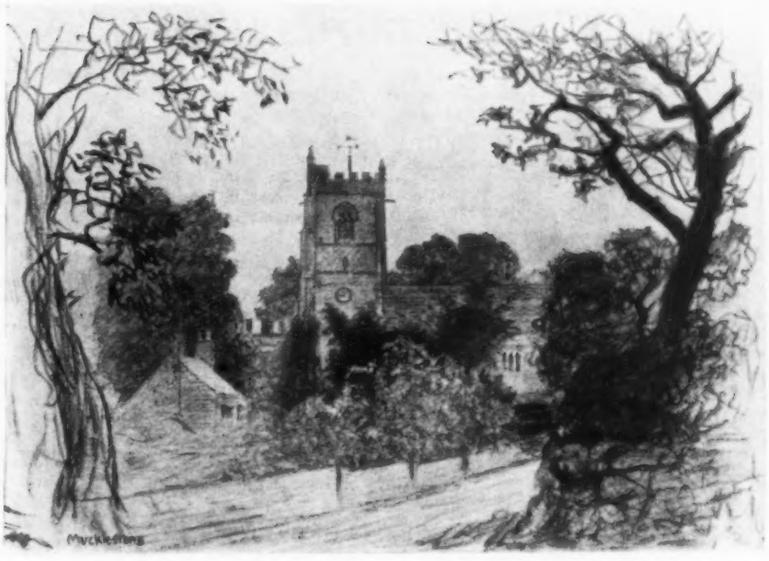
MORE criticism and controversy is stimulated by the conservation of ancient monuments than by almost any other kind of architectural activity. Popular interest on the subject is keen, and everyone feels a personal right to an opinion and gives it expression without exhibiting the diffidence that Englishmen usually feel about matters of art. A romantic glamour hangs about the ruins of the past and people who may be quite indifferent to the appeal of modern works are alive to the charm of buildings handed down to us from the past. Apart from any question of romance, an old ruin in England, however dilapidated it may be, almost invariably possesses one architectural quality in perfection: it is mellowed by a growth of moss and lichen, and of larger herbs and plants, until it presents at least the beauty of colour not easily attained in new material. Under these circumstances the question, "What is to be done with our ancient monuments?" would be answered by most sensitive people with a fervent "For goodness sake leave them alone," and if the effect of progressive decay could be avoided by the simple process of ignoring it no active works of repair would be needed. Buildings in this country are subjected, however, to a destructively rigorous climate, and the walls of a roofless ruin have the mortar washed away by rain, their stones displaced by frost, and any tendency of a mass to overbalance becomes more pronounced in the course of years under these influences acting together with forces of wind pressure and gravitation. Even the vegetation tends to get out of hand and to obscure too much of the architecture, which it destroys with its swelling roots until individual stones are thrust off wall tops, and the walls themselves split longitudinally down the centre of their width.

Restoration versus Conservation.

WHEN a ruin like that of Tintern Abbey arrives at this state, something has to be done, and where it is an historical building of national importance it may be handed over to H.M. Office of Works for conservation if it is in danger of becoming a burden to the resources of its owner. Indolence and the spirit of *laissez faire* may generally be trusted to ensure that any building which is not in desperate need of attention will remain ignored, for few people view their architectural duties to posterity in a very serious light. The excessively drastic "restoration" of old buildings during the Gothic revival by a process of pulling down old and building up new work to suit some individual architect's ideas on design was followed by a reaction in favour of "conservation, not restoration," under which ancient relics were to be maintained with as little alteration as might be. Several societies interested in the safeguarding of ancient buildings seem to have agreed upon this leading principle. It would be too much to expect them to agree in all points of detailed treatment, but the great difference between nineteenth-century restoration and twentieth-century conservation lies in the idea that whereas thirty years ago the ancient building was made subservient to the architect's scheme, the conservator now approaches the building in a humbler spirit and endeavours to learn from it the best and least intrusive methods of repair.



Royal Academy Exhibition, 1922.
MESSRS. G. GILBERT SCOTT, R.A., & A. GILBERT SCOTT, Architects.



If the old method was fatal to the building, the new one seems to bring little credit to the architect. The uninstructed critic is bound to ask "What is there to show for the money?" and the intelligent and well-informed one will find occasion just as certainly to grieve over some point of technical detail which does not agree with his preconceived ideas.

The S.P.A.B. Report.

We have again the pleasure of seeing something of the activities of the Society for the Preservation of Ancient Buildings, in its welcome annual report. The notes on cases cover twenty-one subjects, and the Society has reason to be gratified and heartened in its work by the conspicuous success which has attended its efforts. The Eashing cottages we illustrate are now a national possession owing to the action of a member of the Society, being now in repair and held by the National Trust. Though their architectural merit is not great, it is well to know that such an interesting relic of the past is now saved. The old screen in Hullavington Church, also illustrated, has been destroyed; but a few panels have been saved, and thanks to a photograph by the Rev. F. Sumner we are able to judge of its effect. It appears that it is only since 1917 that the wanton destruction of this interesting old screen has taken place. It stood across the north aisle, and there are still two other examples of the balcony front in Wiltshire — those at Avebury and Edington.

Is Gothic Art Dead?

The address to the Society on June 17, by Mr. Clutton-Brock, is given in the report and contains some stimulating comment on the Society's work—when he says the problem is not merely restoration but the whole problem of church architecture, notwithstanding the continuance of our religious feeling, and the splendid work of Bentley, Bodley, Scott, and others. He appears to think Gothic architecture should be now given the go-by; and that if we now build a Gothic church it will be sham-Gothic. We wonder if this reasoning of a clever writer would be supported by those who have inherited the tradition and instinct of our Gothic art, and have practised it with signal success?

Brick and Concrete.

From the advertisements appearing in the dailies it would appear that the brick industry is feeling the competition of other building materials, and the great development in concrete construction and its application as a building material, added to the improvement in its quality, makes it a formidable rival. Yet there should be plenty of room for both. Locality will no doubt affect the matter, and in a stone country stone will continue to be used, as brick in a clay country, and it should be a matter rather for congratulation that a material new in its use should be added to the more traditional sources of building materials, with such new scope and possibilities. If as the result of a sound specification its durability is established, and this appears to be the case, its more general use in architectural construction is pretty sure to follow. Architects therefore should not look askance at the material, but bring their experience to promote its use in the best ways. Experiments in treating the surface show that surface textures are possible that make it quite agreeable to the eye, and the coloured block has possibilities lying in it for a decorative treatment that should enhance the effect.

From a Photograph by the Rev. F. Sumner.

Old Screen, Hullavington Church.

GENERAL NEWS.

Professional Announcements.

Messrs. Boreham & Gladding, architects and surveyors, have moved their offices from 119, Moorgate, to 1, Museum-street, W.C.1.

Mr. Thomas Adams, F.S.I., and Mr. Longstreth Thompson, B.Sc. (Eng., Lond.) have entered into a partnership for the purpose of practising as town-planning consultants. The firm will act in collaboration with Messrs. Thomas H. Mawson & Sons, architects and landscape architects, Lancaster. Offices: London, 121, Victoria-street, Westminster, S.W. 1 (telephone, Victoria 7087); and New York, 16, East 41st Street.

Surveyor's Estate.

The late Mr. J. H. Sabin, of Little College-street, Westminster Abbey, S.W., and West Hill, Highgate, N., President of the Surveyors' Institution, and senior partner in Messrs. Smith, Gore & Co., left estate value £23,318.

The Timber Disposal Department.

The Timber Disposal Department, Board of Trade, has been transferred from 49, Wellington-street, Strand, W.C.2, to the Board of Trade Offices, first floor, Great George-street, S.W.1. Telephone address: Victoria 3840. Telegraphic address: "Timdissect Parl, London."

R.I.B.A. Visit to Hampton Court.

A visit to Hampton Court Palace has been arranged for to-morrow (Saturday) in connection with the Royal Institute of British Architects. Members and friends taking part should assemble at 2 p.m. at the Trophy Gate, Hampton Court, when the official guide will take charge of the party. Those desiring to take part should notify the Secretary of the R.I.B.A. as soon as possible.

Neudrum Monastery.

The extensive excavations which have recently been carried out by the Belfast Natural History Society on Mahee Island, Strangford Lough, near Belfast, have revealed the ancient ruins of Neudrum Monastery, which is mentioned in Muircha's "Life of St. Patrick," written before 699 A.D. At the time of the Ulster plantation by James I all traces of these monastic buildings were lost. The present excavations have brought to light much valuable material, including stones with writing on them, though the meaning of it is not yet ascertained. Little of the masonry, however, now remains.

From a Sketch by MR. E. B. LAMB.

Obituary.

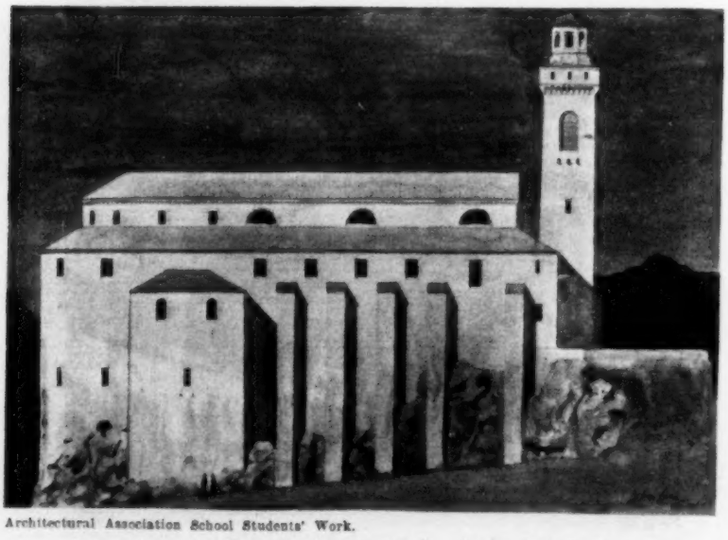
The death took place on August 10, after a long illness, of Mr. Walter James Burrows, F.R.I.B.A., at the age of 61.

The death occurred on Saturday last of Mr Collings Beatson Young, Lic.R.I.B.A., in his 65th year. Deceased was articled in 1874 to Mr. Henry Lovegrove, and for many years acted for the Gordon Hotels Company on many of their large buildings. He was for a long period chief assistant to Messrs. Geo. Elkington & Sons, and was recently in the office of Messrs. Lovegrove & Papworth. In 1906 Mr. Young passed the examination for District Surveyor, and in 1910 was elected a Licentiate R.I.B.A.

The National Gallery.

During the past few weeks the collection at the National Gallery has had several additions.

Sir Henry Howorth has presented several of the choicest works in his collection, namely a Holy Family by the Spanish painter Antonio Castillo y Saavedra (Room 18), a personal and original painting in an elaborate contemporary frame; an interesting *predella* of the school of Masaccio, representing the Nativity (Room 1) and a painting of Two Boys' Heads by Jacob van Oost the Elder (Room 12); an anonymous "Birth of the Virgin," belonging to the Dutch School c. 1510 (Room 15). Mr. F. D. Lycett Green has presented a work by the late Venetian painter Amigoni, representing the Infant Christ with St. Anthony of Padua (Room 7).



Architectural Association School Students' Work.

Design for an Alpine Monastery. By MR. J. GRAY.

COMPETITION NEWS.

Chelsea.

FOR THE COUNCIL OF THE CHELSEA HOSPITAL FOR WOMEN.—Designs for nurses' home (100 bedrooms) to be erected in the hospital grounds. Names to be sent in on or before September 16 (See our issue for Aug. 4.)

Southend-on-Sea.

FOR THE EDUCATION COMMITTEE.—Designs for a secondary school. Sending-in day, August 31. (See our issue for June 16.)

Chicago.

The *Chicago Tribune* proposes to erect a new home which it hopes "to make a monument of surpassing beauty," and is offering 100,000 dollars in prizes to architects for designs. The contest is open and international. Applications for entry must be filed before August 1, 1922. Drawings must be submitted between then and November 1, 1922. Further information from the *Chicago Tribune*, 5, Rue Lamartine, Paris, France.

Antwerp.

The Province of Antwerp has inaugurated a competition for the laying-out of 220 acres as a park and securing an harmonious development of the neighbourhood. Prizes of 10,000 and 8,000 francs are offered, and the competition is open to non-enemy subjects. Among the adjudicators is Sir Lawrence Weaver. Sending-in day, September 29.

Hampstead Garden Suburb.

FOR SECOND HAMPSTEAD TENANTS, LTD.—Designs for lay-out and erection of a group of labour-saving flats, at Hampstead Way. (See our issue for July 28.)

Colombo.

FOR THE MUNICIPAL COUNCIL, COLOMBO.—Designs for a Town Hall and Municipal Offices. Sending-in day, November 1, 1922. (See our issue for July 14.)

CORRESPONDENCE.

"The Master Mason of St. Paul's."

Sir,—Quite rightly, Mr. Horner claims recognition of Edward Strong's work on St Paul's Cathedral; but we have to go farther than this and acknowledge the contribution to the building of the Strongs as a family. Three of them—grandfather, father and son—were employed on it. Thomas Strong, with Joshua Marshall, put in the foundations; "the first stone of the new Cathedral was laid at the south-east corner of the choir by Mr. Strong and the second by Mr. Longland on June 21st, 1675." Edward Strong followed his father and helped to build the dome. Edward Strong, junr., was with Wren's son when he laid the top stone of the lantern in October, 1708.

They were a great family of masons and quarry owners, and such was their skill that the carving of the stone, as well as the general work on it, was always included in their accounts.

I believe Mr. Horner, or any other London builder, would find a great deal to interest him in the late J. M. W. Halley's article in the R.I.B.A. *Journal* for December 5 and 19, 1914. It deals with the building accounts of the Cathedral, covering every kind of item from payments "ffor meat for the Doggs" up to £650 paid to Bird for the sculpture in the great west pediment; Hawksmoor's wages as assistant to the architect; pencils and paper for the drawing office; payments for machines constructed for hoisting the materials; payments of coach hire for Wren to visit the quarries; payments for models; for iron chains to build into the dome; payments to master tradesmen of all kinds, by name, for their executed work. Not only do these accounts increase one's admiration of Wren's administrative capacity; they show how ably he was supported and seconded by the great master masons, master carpenters, and all other masters of their trades who worked under him and with him.

Gray's Inn, W.C. Arthur Keen.

Symbolic Ornament.

Sir,—The article on "Symbolic Ornament," by Mr. Hyams, which appeared in your last week's issue, calls for comment. While reminding one of the old story of the curate's egg—that it is good in parts—Mr. Hyams seems to have lost control of his subject, and it is somewhat difficult to follow the trend of his thoughts and their application.

I was not aware that any of our celebrated masters of to-day were guilty of the crime of "sticking ornament on afterwards 'to please the eye'"; but apart from this there are other remarks in this article which I should like to touch on briefly.

I do not, for instance, see that if, as Mr. Hyams states, "all ornament was at first functional," how the ancient egg-and-tongue ornament had any functional use. Surely he would mean that the *moulds* were functional? The ancients were logical in all their architecture, and ornament was a decoration which generally closely followed and interpreted the mould. It was the actual shape of the mould (say, for example, an ovolo) which was functional. A stringcourse, or frieze, or any mould member which had to imply continuity or a horizontal effect, had an ornament which gave its *raison d'être*—such as an evolute spiral band. Such ornament is used to-day, and logically so; and his statement about incessant repetition in Greek architecture can well be answered by the remark that repetition gives richness.

Mr. Hyams should know that to make a column simply of blocks of stone, without capital or base, would be unsatisfying to the eye; and the optical corrections carried out by the Greeks, and perfected in the Parthenon, should be ample reason for our "slavishly copying Greek slave architecture." A complete refutation of the expression "slave architecture," which Mr. Hyams has twice used, will be found in last week's issue of *The Builder*, on page 189, where it refers to Pericles employing demobilised soldiers on buildings which still stand unsurpassed for their beauty and truth, and for their spirit of democratic craftsmanship. Surely Mr. Hyams should know his classics better than to imagine the Greek citizen a slave.

The remark that "if our architecture said nothing then silence is more dignified than apish mimicry" is meaningless in the light of what is being achieved to-day. Could anything be more dignified than the design of Adelaide House which is now being erected, also several of the buildings recently completed in Kingsway, to mention a few examples only?

Mr. Hyams goes on to say that modern Gothic is no better. If he had said this at the period of debased Gothic which flourished during the Victorian era he would have deserved the thanks of all men, but to-day is there anything finer or more successfully expressive of modern building construction than the new Liverpool Cathedral and several other churches carried out by the same architect?

The remark that "the more one thinks about the present state of things the more hopeless it all seems and the more one is inclined to try and get back to fundamental principles" serves to illustrate the confusion of Mr. Hyams' reasoning.

The fundamentals of architecture commenced with walls and a roof, the necessities of a primitive people. The further outcome were openings for doors and windows and columns for a kind of verandah which was added to protect the walls and for shade. The Greek moulds were also logical and served their various purposes—and of the ornament applied to them I have already written. Now, as these fundamentals are carried out to-day with such modifications as are suitable for a different age and requirements, I do not see the point of going back, as we are still acting on fundamentals.

Mr. Hyams may think I have missed his subject of symbolic ornament by referring constantly to constructive detail, but as he has in the greater portion of his article referred to architecture I have been obliged to follow him. He says, "ornament will exist so long as we build," embracing the two, and, of course, rightly so; but it is only in the final portion of his article that he gives us a dissertation on his ideas of making an ornamental use of "swords, anchors, pens, the moon," &c., in architecture. Finally, in complete disregard of his previous arguments, he enumerates all the well-known ancient ornaments as examples for us to go back to and copy, and one is therefore left wondering in what manner to apply his theories.

One has only to look around to-day on decorative art as applied to some of the finest of our buildings to see that a creative spirit in metal work, fibrous plaster, carving, &c., is still active amongst us; and, as Professor Flinders Petrie has said, "the demands of each age were its ideas and were the really important things."

Chelsea. A. Archer-Betham

London University: Free Site at the Marble Arch.

Sir,—Why should millions be spent when at least one very suitable free site is available as above? The structure might be planned so as really not to be any encroachment on the public right, but rather a development of the popular idea of that, and freedom of speech, which has long had a home at the spot. The proposal was pointed out to the University and other authorities two years ago and acknowledged, but up till now has been ignored.

"O. B. I. T."

The Art Galleries of Western Holland.

Sir,—The article in your issue of August 11 on the art galleries of Western Holland is most interesting to anybody who has had to deal with the problem of lighting a picture gallery.

Unfortunately I have not yet had the opportunity of visiting these galleries myself and should very much like to know whether the majority of the pictures in them have glass in front of them or not.

One often finds that a picture in a certain position without its glass has perfect lighting in every way, but in the same position with the glass added reflections are shown which make it quite impossible to look at the picture with pleasure.

Warrington. Geoffrey Owen.

Other Letters.

[A letter on "A Freedom of Sorts," by Mr. C. Maxwell Aylwin, is given on p. 231; other letters are unavoidably held over.]

Dangerous Statues.

At a recent inquest held by Dr. Waldo, relative to the death of a man who was knocked down by an omnibus near the King William statue, police evidence was given to the effect that the statue was erected in 1824 when street traffic was light. Other less obstructive statues in the City placed in congested and dangerous crossing places were those of (1) Albert Prince Consort in Holborn Circus, and (2) Pitt in Cheapside. Those statues now might be more safely relegated as historical relicts to the Thames Embankment or parks.

Dr. Waldo said it would be, he thought, impossible to have a subway crossing King William-street, owing to the underground railways beneath. In giving evidence before the Select Committee on the Prevention of Street Fatalities, he had made a suggestion that the experiment might be tried of throwing a light overhead bridge from footway to footway. If necessary, a movable stairway could be added. Such an erection would be cheaper than a subway, and movable

Architectural Association School Students' Work.

Design for an Alpine Monastery. By Mr. J. Gray. (*See p.* 234)

BOARDS AND COMMITTEES FOR 1922-23.

THE following Boards and Committees for the Session 1922-23 have been appointed by the Council of the Royal Institute of British Architects :—

Finance and House Committee.

The President, the Honorary Secretary, Messrs. Sydney Perks, H. D. Searles-Wood, Stanley H. Hamp.

Fellowship Drawings Committee.

The President, the Honorary Secretary, Messrs. E. P. Warren, Heaton Comyn, C. Lovett Gill.

The Royal Gold Medal Committee.

The President, Messrs. A. W. S. Cross, George Hubbard, H. D. Searles-Wood, C. Heathcote, the Honorary Secretary, Mr. J. A. Gotch, Sir Edwin L. Lutyens, R.A., Sir Reginald Blomfield, R.A., Messrs. Francis Jones, C. B. Flockton, Heaton Comyn, T. R. Milburn, E. P. Warren.

Board of Architectural Education.

The President, the Honorary Secretary, Messrs. H. D. Searles-Wood, George Hubbard, A. W. S. Cross, Professor S. D. Adshead, Messrs. Robert Atkinson, H. Chalton Bradshaw, Walter Cave, E. Guy Dawber, Professor A. C. Dickie, Messrs. H. M. Fletcher, W. Curtis Green, Sir Robert S. Lorimer, A.R.A., Professor Beresford Pite, Mr. W. S. Purchon, Professor A. E. Richardson, Professor C. H. Reilly; Messrs. Alan E. Munby, H. Austen Hall, E. Stanley Hall.

Town Planning Committee.

The President, the Honorary Secretary, Professor Patrick Abercrombie, M.A., Professor S. D. Adshead, M.A., Mr. Robert Atkinson, Major Harry Barnes, M.P., Sir Reginald Blomfield, R.A., Messrs. Walter Cave, Arthur Crow, T. Raffles Davison, W. R. Davidge, F. M. Elgood, Edwin T. Hall, W. Haywood, Col. R. C. Hellard, C.B., Sir Herbert Jekyll, Messrs. H. V. Lanchester, H. J. Leaning, Professor W. R. Lethaby, Sir Edwin Lutyens, R.A., Mr. D. Barclay Niven, Professor Beresford Pite, M.A.; Messrs. C. H. B. Quennell, W. E. Riley, R.B.A., W. H. Seth Smith, Herbert Shepherd, John W. Simpson, Raymond Unwin, Sir Aston Webb, P.R.A.

The Competitions Committee.

The President, the Honorary Secretary, Professor Patrick Abercrombie, M.A.; Messrs. W. H. Ansell, Henry V. Ashley, G. Leonard Elkington, L. Rome Guthrie, E. Vincent Harris, H. V. Lanchester, F. Winton Newman, William A. Pite, T. Taliesin Rees, J. Douglas Scott, Septimus Warwick, Herbert A. Welch, W. G. Wilson.

The R.E. Mess Memorial Committee.

Messrs. Horace Cubitt, Gilbert Fraser, T. F. W. Grant, Maurice E. Webb.

The London Building Acts Committee.

The President, the Honorary Secretary, Professor S. D. Adshead, Messrs. Walter Cave, Horace Cubitt, W. R. Davidge, C. A. Daubney, E. Guy Dawber, F.S.A., Matt. Dawson, Sir Banister Fletcher, Messrs. H. Austen Hall, George Hubbard, F.S.A., J. J. Joass, Delissa Joseph, Sydney Perks, F.S.A., H. D. Searles-Wood, Digby L. Solomon, B.Sc., Sir Henry Tanner, C.B., I.S.O.

The Registration Committee.

The President, Messrs. H. D. Searles-Wood, George Hubbard, A. W. S. Cross, M.A., C. Heathcote, the Honorary Secretary, Messrs. W. Gillbee Scott, C. B. Flockton, Sydney Perks, Delissa Joseph, Herbert Shepherd, W. G. Hunt, H. G. Fisher, Major Harry Barnes, M.P., Messrs. Arthur Welford, W. E. Riley, Heaton Comyn, W. R. Davidge, T. R. Milburn, A. C. Collard, Frank Woodward, G. Topham Forrest, Percival M. Fraser, L. A. Culliford, C. Lovett Gill, W. W. Scott-Moncrieff.

The Charter and By-Laws Committee.

The President, Messrs. A. W. S. Cross, C. Heathcote, George Hubbard, H. D. Searles-Wood, the Honorary Secretary, Messrs. W. H. Ashford, Max Clarke, Sydney Perks, Herbert Shepherd, J. A. Swan.

The Sessional Papers Committee.

The President, the Honorary Secretary, Messrs. Martin S. Briggs, Walter Cave.

The Annual Dinner Committee.

The President, the Honorary Secretary, Messrs. Walter Cave, William Woodward.

ADDITIONAL MEMBERS TO THE FOUR STANDING COMMITTEES.

Art Standing Committee.

Messrs. F. R. Hiorns, W. R. Davidge, C. Lovett Gill, H. P. Burke Downing, Walter Tapper.

Literature Standing Committee.

Messrs. J. A. Gotch, Harry Sirr, Basil Oliver, L. A. Culliford, W. H. Ward

Practice Standing Committee.

Messrs. T. R. Milburn, Percival M. Fraser, Francis Jones, Harry Teather, W. Henry White.

Science Standing Committee.

Messrs. J. Ernest Franck, S. B. Russell, E. Fiander Etchells, J. E. Dixon-Spain, A. W. Moore.

ST. PAUL'S CATHEDRAL.

The President of the Royal Institute has received a letter from Canon S. A. Alexander (Treasurer of St. Paul's Cathedral), calling attention to the new appeal for the preservation of the Cathedral. It is pointed out that the Institute sent a hundred guineas in 1914, and Canon Alexander expresses the hope that it might be possible for the Institute to give further support at this critical time.

The Dean and Chapter of St. Paul's are asking for the sum of one hundred thousand pounds for the essential work of repair on the piers and arches supporting the dome of the Cathedral, which have been declared insecure by the special commission of architects and engineers appointed last autumn to examine the condition of the building. The cost of the work on the south transept, now almost completed, has been defrayed by a fund raised by public subscription in 1914. This is now almost exhausted, and a further £100,000 is necessary to enable the repair of the defects recently disclosed by the Commission's report to be carried out. The need is urgent; it has even been suggested that it may be necessary to close the Cathedral for a long period. It is hoped to avoid this extreme course if a generous response is forthcoming to the appeal for fresh funds

The Council of the Royal Institute has decided to establish a R.I.B.A. Fund and to appeal to members for subscriptions. The allied societies of the R.I.B.A. in the provinces have been invited to open subscription lists in their own districts and to forward collectively to the R.I.B.A. the amounts so received. The Council appeals especially to London architects to send subscriptions, however small, to the fund, so that a worthy contribution may be made by the architectural profession towards safeguarding the strength and permanence of the masterpiece created by the daring genius of Wren. There is no more fitting or sincere method in which architects can commemorate the approaching bicentenary of the death of one of the greatest of their number.

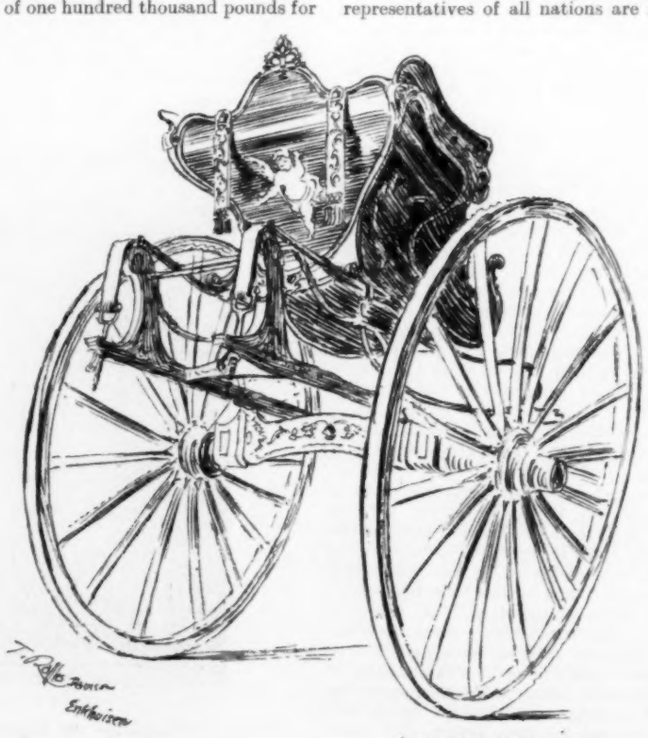
The list will be closed at an early date, and members are therefore invited to forward their subscriptions to the Secretary, R.I.B.A., as soon as possible.

Appointment.

The President has appointed Mr. G. C. Lawrence (President of the Bristol Society of Architects) as representative of the Royal Institute of British Architects on the Court of Governors of the University College of the South-West of England.

International Congress of Architects.

Mr. George Oakley Totten has been appointed representative of the American Institute of Architects to the International Congress of Architects to be held at Brussels in September. Mr. Totten will carry with him an invitation from the American Institute of Architects for the eleventh International Congress of Architects to be held at Washington in 1926, to which representatives of all nations are invited.



A Burgomaster's Carriage

"A FREEDOM OF SORTS."

WE have received the following "open letter" from Mr. C. Maxwell Aylwin in reply to the letter by "Isis" in our last issue:—

MY DEAR "ISIS."—Having so often crossed pens with you in more or less friendly debate, I take the liberty of addressing you with some familiarity as a relief from the stilted indirect intercourse we have hitherto enjoyed under the kindly chaperonage of a respected editor. I feel that you, as well as myself, will have grown a little weary of the persistence with which we seem to have insisted on disagreement, more particularly as we must each recognise the sincerity of the other and that there is much that we hold in common.

I therefore propose here to set down as clearly as I can, something to express the creed that has inspired the things I have written and which have so often stung you to protest. This I shall set down not so much as an argument as a simple confession of faith to weigh against yours if, as I sincerely hope, you will favour me with it. Though my words will of necessity be incomplete (for a creed, being rather a state of mind than a mere code of ethics, cannot be adequately defined), I rely upon you not to tread rough-shod over the tender places, however much you may be tempted as an able debater.

I think that when you have exhorted me to "lift up mine eyes unto the hills" or words to that effect, I have been a little prone to assume that you are quite unaware of the rabbit holes, to say nothing of the yawning chasms that make treacherous the path thither. May I also suggest that you, when I lay stress on these pitfalls, are a little too apt to attribute to me an utter blindness to the goal? We shall narrow down our differences if I recognise in you a discretion and you in me an aim.

First, then, you seem to have stuck at the vexed question of the "master mind" dominating the "struggling masses." It certainly sounds very Prussian and horrible put baldly in that way, and yet the two phrases are authentic pieces and nearly adjacent in the finished solution of my jig-saw puzzle, though there are many pieces to fit round before their crude colours merge into the picture. What do I mean then by the "struggling masses"? The living wage — unemployment doles — National Health Insurance—popular education, surely there can be no struggle left for the spoon-fed working classes!

Yet you know as well as I do that these very expedients devour wealth which has to be made good by a feverish increase of effort in the midst of which the working man hardly dares to encourage an imagination. The struggle is born of natural not artificial conditions. It is Mother England toiling to support a rapidly increasing family, for where but a few centuries ago thousands plodded pleasantly among her fertile fields to the song of the thrush, now millions toil in the smoke of factories to the din of machinery. Is it to be wondered at that a man finds difficulty in working up a religious fervour when a definite exacting output is required of him and while he is always conscious of the man round the corner ready and anxious to take his place should he fail?

To refer to the "struggling masses" may be writing a hard fact, but the writing does not denote a hard heart within the writer.

The religious fervour of the mediæval craftsman was a wonderful thing, and it produced many wonderful works to which none but the most hopeless Philistine can remain blind or indifferent. It was, however, mainly beautiful in that it was a typical sign of the times, and it cannot repeat itself exactly unless such times are repeated. Who can expect or wish for such a miracle? Yet I refuse to be depressed.

Each stage in man's development has meant the loss of something for the gain of something greater. When the human race descended from the tree tops the primitive man lost the thrill of the swing from branch to branch, the rush of air, the lovely leafy canopy. Yet he gained a fuller freedom that was not bound by the limits of the woods, but revealed new beauty in the rocky hills, the sea, the moors. So, through each upward stage, new and greater problems to solve and a wider freedom to gain. That I suggest as a healthy attitude of mind for all who desire progress. Without this gain we may well attend the obsequies of the past and go sadly home. With it we may pay our respects reverently and go into the world eager for the struggle.

Let us not, therefore, dwell too morbidly upon the things we have lost since the Middle Ages. A little faith has been merged into knowledge, a little fervour turned to plain enthusiasm, a little mysticism has faded in the glorious light of science. The workman no longer lives in the atmosphere that breeds fervour, and we must not expect it of him; but we can get from him the enthusiasm of a private in a vast army, which by willing and obedient service under wise direction can conquer the world. It is for the highly-trained architect of to-day to see that such direction is wisely given, that our works may stand as a true expression of the busy powerful age in which we live. It is a vast problem, and one far greater than that with which the mediæval master mason had to contend; but by its very vastness it proves a greater source of inspiration if squarely faced.

Therefore I think we do well to glory in the flight round the world, the dive into the deep, the great bridges and viaducts, the vast halls and railway stations, as the child glories in his growing strength, the youth in his health and energy, and the mature man in his endurance; and I think they better express the times than could any artificial attempt to call back a mystic fervour which, wonderful in its own age, has now lost its significance in enlightenment. And I feel convinced that the architect supreme is essential to the production of all great building works of such vast possibilities. The claim for a "master mind" over each fine building effort is no personal boast (as you have tried to turn it), for, lack-a-day, the world of enterprise has not yet held out its hands for me. It is merely my conception of the part the architect has to play in the scheme of modern things—your part also, O Isis! and one you are doubtless as ready to play as shall I be when opportunity presents.

Now to turn to another matter, a little more specific. You will have gathered that repeatedly I have taken upon myself, in many of my recent articles, to be the champion of the classic orders as a live element in modern design; not because they are threatened with extinction under the hand of the men who build, but that they are so much abused by the men who write. Though the use of these features appears to clash with the reason of many sincere and deep thinking men, it is too deep a habit lightly to cast off, and it is very significant that the vast majority of the fine buildings of to-day are based upon the classic orders.

May I touch upon a simple parallel? It has been suggested that in primitive times men when meeting grasped each other by the right hand as an assurance that it held no weapon. The tradition still remains with us as a sign of friendship quite without relation to the bearing of weapons, in fact the man who is suspected of violent intentions is the last in the world to be favoured with this ancient sign. Life is full of such paradox, and art would be a very dull thing were it not so.

To me the orders have acquired a new vital significance since the Greeks first laid stone upon stone and lintel across column to bear the roof that sheltered their gods. They are a part of the language of design. They make it articulate, give it a unit of scale, and express the dignity born of a fine tradition. So they were used by Rome, and so later by Palladio, and Jones and Wren. So they may be used to-day with a new lease of life, now we have returned naturally to post and lintel construction.

I am convinced that if we can only accept them with some feeling of unanimity and as a living fact the progress of the art of fine building will receive a great impetus.

Please do not think that I am well satisfied with the general standard of modern work. I shall agree with you that much of it is horrible, but I attribute the illness more to the personnel of the profession than to false ideals among its sincere exponents. I look for the remedy in politics rather than in missionary effort. Let the body of enthusiastic young architects use their votes to elect a Council concerned mainly in the cult of fine architecture; a board of examiners who will demand the highest architectural qualities from any would-be successful candidate; let the technical press refuse to illustrate any but the choicest works of art, and let the Academy develop an equal perception.

Only in this way shall we be rid of the reproach cast upon us through the unworthy work of men whose main interest is in remunerative party-wall and rights-of-light disputes and who design without any sense of artistic responsibility. Then we may bravely continue on the path we are hewing without trusting to the treacherous swamps at either hand. Revolution is a terrible thing to let loose unless we are sure that the existing order is rotten to the core. I shudder to think that English architecture may not even yet be saved from the madness of Amsterdam.

From the Annual Report of the Society for the Protection of Ancient Buildings.

Cottages at Eashing Bridge, Surrey. (*See p.* 227)

THE ROYAL ARCHÆOLOGICAL INSTITUTE.

BY H. J. D. ASTLEY, M.A., LITT.D., F.R.HIST.SOC.

THE annual meeting of the Royal Archæological Institute was held at Ripon from July 19 to 26. The President, Sir H. H. Howorth, F.R.S., F.S.A., &c., was present, and the duties of Hon. Secretary were performed by Capt. B. Howard Cunnington, F.S.A. (Scotland), of Devizes, assisted by Col. J. C. R. Husband, M.D., and other local gentlemen who, with the Mayor, Mr. Fennell, formed a Reception Committee. About 100 members were present, the headquarters being at the Spa Hotel.

On the opening day, there was an official reception by the Mayor and Corporation at the Town Hall. The Mayor accorded a hearty welcome to the Institute, Sir H. H. Howorth suitably responding.

Thursday.

RIPON CATHEDRAL.—The proceedings, on Thursday, began with a visit to the Cathedral. Before entering the building, the members gathered under the south side to listen to an address by Mr. A. Hamilton Thompson, F.S.A., on the history of Ripon. In the year 660 A.D., Alcfrith, son of Oswy, and King of Northumbria, invited Æita, the Abbot of Melrose, and tutor of St. Cuthbert, to send Irish monks to Ripon; this was the beginning of the Anglican monastery, which was, of course, on the Celtic model, and in which the clergy lived a common life, like secular canons. Very soon the establishment was put into the hands of Wilfrid, the Bishop of York, Hexham, and Ripon, and Ripon's patron saint. He built the first church, of which only the crypt remains, as at Hexham, about 670. This original Saxon church must have been similar to the one at Monkwearmouth, which exists to-day, almost in its first state. A three days' banquet was held, and Wilfrid presented rich gifts, among others a magnificent copy of the gospels in a gold case studded with jewels. He was expelled from the north in 678, but after a stormy period in the south, during which he converted the south Saxons of Sussex, he returned to Ripon in 686; at the Synod of Austerfield, in 703, he was adjudged to have Ripon only; at the Synod of Nidd, in 705, he was again given Hexham also, and in 709 he died at Oundle, and was brought here for burial. Athelstan granted privilege of sanctuary to Ripon, and of the four Crosses which marked the boundaries the stump of one remains, and was seen by the visitors later in the week. At the Conquest there was a Chapter of Secular Canons at Ripon, as at York, Beverley, and Southwell. In 1548, the College of Canons was suppressed, and in 1604 was re-established as a Collegiate Church. In 1836 came the creation of the Diocese of Ripon, out of York and Chester, after the modern Cathedral pattern, "which although more suitable for the age responsible for it, marks a constitutional revolution and a break in continuity" to be deplored.

On entering the Cathedral, Mr. John Bilson, F.S.A., after an address in the choir, conducted the visitors round the edifice. After referring to Dr. J. T. Fowler's "Memorials of the Church," Mr. Bilson said that after the erection of Wilfrid's church—in which the altar was probably to the west, as at Silchester—we knew nothing till the year 1178. In that year Roger de Pont l'Evêque, Archbishop of York, rebuilt the "Basilica," and of his work the south side of the choir, the transepts and crossing and the west end of the nave remain; the western towers and west front, much restored by Sir Gilbert Scott, are of about 1245 to 1255. The main influence here, however, may be described as derived from the Cistercian movement, and Ripon takes its place alongside of Fountains, and more particularly Roche, as an example of the stern severity and simplicity that marked the original architectural *motifs* of that Order. The choir stalls, of which some original ones remain, date from 1489 on the west to 1494 on the east. The hitherto aisleless nave was given two aisles in 1490–1524. Of the three spires the central one was taken down in 1615; the two western ones in 1680. The building erected in the twelfth century was one of the supreme examples of the northern type of highly refined Romanesque, which developed into Gothic, and Mr. Bilson emphasised the importance of the study of an example so restrained and chaste, and scientifically right, as the twelfth-century work here, especially to-day when architecture was, he said, commonly so unrestful, so much over-decorated, and scientifically wrong.

Mr. W. M. I'Anson, F.S.A., added a few words on the identity of the military effigies in the church.

KIRBY HILL CHURCH.—After lunch the party proceeded to Kirby Hill, Boroughbridge, and Aldborough. The church at Kirby Hill was described by Lieut.-Col. E. Kitson Clark, F.S.A., as a most interesting building containing much early Romanesque work of between 1050 and 1070. The original church consisted of the usual aisleless nave and a chancel shorter than the present one, the north aisle being added about 1175. Attention was drawn to the size of the stones used in the walling, and to the Roman stones in the tower, which came from Isurium Brigantum, now Aldborough. There are the remains of an earlier south doorway in an impost embedded in the wall alongside. This is ornamented in the usual Saxon style, and is very similar to the decoration on Acca's Cross at Hexham, 744 A.D., pointing to the existence of a church here in the eighth century.

BOROUGHBRIDGE.—At Boroughbridge the party visited "The Devil's Stones," three enormous monoliths, leading down to the river. Col. Clark said very little was known as to their purpose. They might have been part of a funerary monument, or of a prehistoric circle, but his own idea was that they were intended to guide the prehistoric dwellers in the district to the ford over the river. In that case, however, it is not clear why they needed to be so large!

ALDBOROUGH.—At Aldborough the remains of the Roman station of Isurium were visited, under the able guidance of Lady Lawson-Tancred, who resides at the Hall, and has written a clever little brochure on the subject. Isurium was sacked and burnt in the year 768 or 868—it is not certain which. The line of the wall, of which much still exists, can be clearly traced, and the baths and many villas. Some interesting tesselated pavements are carefully preserved, and much pottery and other articles have been found.

The visitors were entertained to tea at the Hall, and hearty votes of thanks were accorded to Sir Thomas and Lady Lawson-Tancred, and to the lecturers, on the proposition of Sir H. H. Howorth.

In the evening a meeting was held in the Town Hall, at which Mr. Hamilton Thompson, F.S.A., gave a most interesting account of the early days of the Cistercian movement in Yorkshire, and of the history of the Order. The paper was enlivened with many extracts from the old monkish chronicles relating to the foundation of Rievaulx, 1132; Fountains, which originated in a secession of thirteen discontented monks from St. Mary's Abbey, York, under Archbishop Turstin, 1132; Newminster, from Fountains, 1138; Kirkstall, 1147; Roche, 1147; Byland, from Savigny; and Jervaulx, from Byland.

Friday.

WENSLEY DALE.—Friday was set apart for a motor coach drive into Wensley Dale. The first stoppage was in the market-place at Masham for a visit to this celebrated church. Here Mr. H. B. McCall, F.S.A., author of the well-known book on the "Richmondshire Churches," explained the two chief objects of interest, viz., the tower, with its beautiful spire, and an early cylindrical carved stone standing near the south door. This has been considered by some to be Norman, but Mr. McCall pointed out that it must in reality be of Anglian date, untouched by Scandinavian influence. The Anglian sculptors, he said, took great pains to clean out with chisels the depths of their carving, and often undercut the lines of their designs; the Danes, though following rudely the same type in the main, were content to sketch out the pattern with the blows of a pick. This stone may have been a structural part of the early building; on the other hand it bears a strong resemblance to part of the restoration of the famous Paulinus Cross at Dewsbury, made by Professor Collingwood, and now in the Huddersfield Museum.

The church, through repeated alterations and extensions, mostly executed in the prosperous decade preceding the Black Death (1349), is now one of the stateliest village churches in Yorkshire, but Mr. McCall took his hearers back to its humble origin in the aisleless church of early Norman days. The chief beauty of the present church is its spire, unusual in Yorkshire—the way in which the square-set Norman tower is made to break into an octagonal "lantern," and then into the graceful spire of wood and lead, is full of charm. This masterpiece of simplicity and elegance is due probably to the influence and purse of Sir Geoffrey de Scrope, the eminent diplomatist, jurist and soldier under Edward III.

The next stop was at Jervaulx, where the Rev. Canon Garrod conducted the visitors over the ruins. The church is gone to the foundations but there are considerable remains of the domestic buildings.

Mr. Hamilton-Thompson noted the distinction between the lay brothers, who could not read and did all the work, and the monks, who led the contemplative life. This is a Cistercian characteristic derived from Savigny. To the former belonged the nave, to the latter the choir, of the church.

Lunch was had at Middleham, after which the castle was visited under the efficient guidance of Mr. I'Anson. He pointed out that there have been three castles here: the first of the early Norman motte and bailey type, of which there are some remains about half-a-mile from the present building; the second, built about 1170, and consisting of a rectangular "donjon," the fourth largest in Europe; and the third, the present one, built by the Nevilles in 1350. They kept the great tower or keep with increased magnificence, making the great hall into a State apartment, and erecting, under its shelter, a range of galleries, so that it was no longer a stronghold but a palace. The old keep was incorporated with the new buildings by the throwing out of wooden galleries. In its finished state it well merited its name of "The Windsor of the North." During the Wars of the Roses it was the principal seat of the Earl of Warwick, "the Kingmaker," and of Richard III.

Under Mr. McCall's guidance the party next drove to Wensley Church, and studied the evolution of another early Norman building till it became what we see it to-day. Wensley has been called "the home of pre-Norman sculptured stones" of the eighth-century, in which it is important to notice that no Scandinavian influence is discernible.

Tea was partaken of at Middleham House by the kind invitation of Mr. and Mrs. Lupton Topham.

At the evening meeting in the Town Hall the Mayor gave an interesting description of the "Horn and Baldrick of Ripon."

Saturday.

The members continued their sight-seeing on Saturday, July 29. Their journey took them away to the north of Ripon, along the very edge of, and overlooking, the wide Vale of Mowbray.

SNAPE CASTLE.—Snape Castle, which, from a distance, looks so imposing a stronghold, is at close quarters obviously designed rather for peace than for war. Mr. W. M. I'Anson, F.S.A., acted as guide. In the middle of the fifteenth-century, George Nevill, first Lord Latimer, abandoned his old home, Danby Castle,

on the bleak Cleveland Moors, and erected this building in the richer plain, and here subsequently resided Catherine Parr, the last of the wives of Henry VIII, who, after the death of the King, married the last of the Lords Latimer. In Elizabeth's reign—about 1585 to 1590—the property had passed to Thomas Cecil, a son of the great Lord Burghley, who was himself afterwards the second Lord Burghley and first Earl of Exeter. He converted the castle into a fine Elizabethan mansion, keeping something of the military form.

BEDALE.—As Snape Castle typified war with its eye on the comforts of peace, Bedale Church gained one of its main features at a time when even the church itself had to be fitted for war. After Bannockburn, the Scottish border lay open, and many and disastrous were the raids made upon the Yorkshire cattle by the Scots, who carried fire and sword into Yorkshire villages. The great tower of Bedale was built in the midst of this succession of dangers—not to hold bells, like most church towers—but as a stronghold and refuge. Its entrance was defended with a portcullis, and the very commodious apartments were provided with their own well, and every necessity for withstanding a siege. Mr. McCall dated this feature at about 1330, but in 1342 the power of the Scots was broken in the battle of Nevill's Cross, and almost immediately afterwards, as if with a sigh of relief and thankfulness, the rest of the church was rebuilt in an altogether lighter style. Mr. McCall was able, however, to show how even in this transformation the little aisleless nave of a church of the tenth century had determined the plan of the later nave, and its primitive corners are in fact still in place.

PATRICK BROMPTON.—The dedication of the church to Patrick Brompton drew from the President, Sir Henry Howorth, the statement that the little cell at Heysham, overlooking Morecambe Bay, was the only other early dedication to St. Patrick in England. To the architectural students of the party the tracing of the influences moulding the architecture was of equal interest. Bedale, Mr. McCall observed, was in its late twelfth-century work apparently inspired by the austere Cistercians of Jervaulx Abbey. The north arcade Mr. McCall described as "Cistercian architecture translated into Anglo-Norman detail." But Patrick Brompton, which was in the patronage of the Benedictine Abbey of St. Mary, at York, has a north arcade of very rich detail, with a distinct resemblance to the elaborate zig-zag decoration of the Chapter House at St. Mary's.

HORNBY.—Hornby Church, which was next visited, has a belfry, with a narrow window divided by a mid-wall shaft. Mr. McCall mentioned that it was in 1075 that the southern monks landed at Jarrow on the Tyne, and built their church, and he suggested 1080 as the date of this tower at Hornby, which is similar in design. He cited it as an illustration of the manner in which pre-Conquest features overlapped the Conquest. The church, like that of Patrick Brompton, has richly decorated work in its north aisle arcade, but this was so buried in whitewash that at a stage in the restoration of the building in 1870, by Mr. Pearson, the architect sent word to the residents at the neighbouring hall that "he rather thought there was some carving under the whitewash." With immense labour, the whitewash was removed, revealing decoration in high relief of a very interesting and peculiar design.

Sunday.

The Mayor and Corporation and the visitors attended the morning service in the Cathedral. In the afternoon some members of the party, under the guidance of Mr. I'Anson, visited the Premonstratensian Abbey of Easby, and the historic Castle of Richmond. Here we have a magnificent building of 1070, with the original walls and Norman windows overlooking the Swale, while the Keep has been erected later, in 1175, over what was the original gateway.

FOUNTAINS HALL AND ABBEY.—In their visit to Fountains the members were joined by the Yorkshire Archæological Society.

Fountains Abbey stands supreme among the historic monuments of Yorkshire, and is also reputed to be the "finest mediæval ruin in the world." In its type Fountains represents an almost antithetical impulse in architecture and art from Rheims. Mr. John Bilson, F.S.A., conducted the party over the ruins, and emphasised the Quaker-like spiritual influences which had had their part in dictating the lines of the architecture. This idea had been the theme of study in more than one of the parish churches visited on the tour, and the churches were better understood now that the influence which moulded them was seen at its source. Fountains, austere as some of its early work is in comparison with the rich work which was being produced contemporaneously throughout Western Europe, is not, however, so severe as some of the still earlier Cistercian abbeys. Some of the earliest Cistercian abbey-churches were barns, as were some of the earliest Methodist chapels.

Lunch was partaken of in the Cellarium of the Lay Brothers, which is well known as one of the finest examples in Europe, consisting as it does of a hall of 20 bays, divided down the centre by a row of piers which spring direct from the base to the vaulting with no intervening capitals (a Burgundian feature). The tour of the buildings was afterwards continued.

Mr. Bilson paid a high tribute of respect to the antiquaries who had done so much for the understanding of Fountains, and said the abbey was a mixture of the architecture brought by the Normans to England from Normandy, modified and "acclimatised" as Anglo-Norman on the one hand, and of Burgundian forms, derived through the intercourse kept up with Citeaux, the parent house, on the other. Thus the pointed, leaf-shaped capitals, certain round windows, and the western narthex, or porch, were Burgundian forms, as was also the use of the plain pointed arch, while other details were those native to the soil of Yorkshire.

A short visit was also paid to Fountains Hall, which was described by Mr. Hamilton Thompson, who showed how fundamentally belonging to the tradition of the native Gothic this building was, despite its many classical details.

During the afternoon the Mayor of Ripon (Alderman Walter Fennell) entertained the members of both societies to a garden party.

The annual meeting was held in the evening, and after the passing of a satisfactory report and balance-sheet, it was unanimously decided that the meeting in 1923 should be held at Norwich. A paper on "The Mediæval Seals of Yorkshire" was then read by Mr. C. H. Hunter-Blair, M.A., F.S.A.

Tuesday.

CHAPEL OF ST. MARY MAGDALENE.—A visit was paid on Tuesday to the chapel of St. Mary Magdalene, where the Rev. Canon Waugh gave an account of the history of the place. It was founded in Norman times by Archbishop Thurstan, as a hospital for lepers, but though its funds have long ago been diverted to the upkeep of almshouses for women it is still required to contribute to the support of the one leper hospital existing in England. There are some interesting remains of the original twelfth-century building in this walling, and the stone altar has been replaced. There is also a curious old wooden bell, now preserved as a relic. Sir Henry Howorth, the president, congratulated the authorities on the careful and conservative restoration recently carried out.

MARKENFIELD HALL.—The next visit was paid, under the guidance of Mr. Sydney Kitson, F.S.A., to Markenfield Hall. The special interest of this house is that here we have a building of the early fourteenth century handed down to us practically unaltered and in its original state.

WEST TANFIELD CHURCH AND THE MARMION TOWER.—In the afternoon West Tanfield Church was visited. The most curious feature of this church is to be seen in a small chamber at the north-east pier. Many uses have been ascribed to it, but in all probability, said Mr. Hamilton Thompson, it was an anchorite's cell. This church contains a number of fourteenth and fifteenth century effigies, which were described by Mr. I'Anson, who remarked that of the 100 effigies in Yorkshire only 12 were identified; four of them for the first time on this occasion. A visit was paid to the Marmion Tower, which Mr. I'Anson described as the gatehouse of a manor, erected in 1328. The old Marmion Castle was not here, but in Tanfield Wood.

NOSTERFIELD.—The largest of three circular earthworks near Tanfield was visited. The most perfect is concealed in a neighbouring wood. After the Rev. H. C. Topham had read a descriptive paper, Mrs. Cunnington pointed out that they could not have been intended for defensive purposes, as the ditch was inside the vallum. On the other hand a military member reminded those present that in the Great War the trench, or ditch, was always inside, and the rampart, or "top," faced the enemy.

In the evening Mr. F. G. Simpson read a paper, illustrated with lantern slides, on "Roman Coastal Defences on the North-East Coast."

Wednesday.

RIPON MUSEUM.—The members visited the museum, one of the old Prebend's Houses in Ripon, which sadly needs re-arrangement, a number of old houses, and "Ailcy Hill." This is a mound to the south-east of the Cathedral, and was evidently a Norman motte, never surmounted by anything more than a wooden palisade.

A final visit was paid to Rievaulx Abbey in the afternoon. A tribute of thanks must be paid to the organisers of the meeting, and to the lecturers who added so much to the edification and enjoyment of the members.

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ILLUSTRATIONS.

Duchy of Cornwall Housing and Improvement Schemes.

These illustrations show: (1) A scheme for improving Hughtown, St. Mary's, Isle of Scilly. These works are contemplated by the Duchy of Cornwall for the improvement of Hughtown, with a view to its becoming a popular seaside resort. The new town is kept distinct from the old port. As a preliminary of the work many of the existing houses are being repaired. (2) Cottages at Longstone, Hughtown, St. Mary's. This shows a range of four houses built with flat roofs. Economy has been the guiding influence in the design; the difficulty of obtaining materials, especially timber, determined the use of concrete for the facings. (3) A group of twelve cottages, which are arranged in three terraces, the centre portion being recessed. These works are in hand. (4) Proposed cottages at Princetown. This scheme shows plans, elevations, and sections for a group of three cottages, to be built on the outskirts of Dartmoor. The design is on traditional lines. The architects are Messrs. Richardson & Gill, FF.R.I.B.A., of London.

Architectural Association School Students' Work.

The following programmes relate to the Architectural Association School Students' work illustrated this week:—

A Garden Retreat.—(Fourth and fifth years; 12-hour sketch.)

Situated in a wooded portion of a large garden is a circular clearing about 80 ft. in diameter. The owner wishes to have a paved court with a small fountain in the centre and a surround of pergola, and desires that the scheme should contain colour.

Façade for a Large Store.—(Third year; 3-week subject.)

A large store on an island site has a frontage of 150 ft. facing a main thoroughfare. The spacing of stanchions is at 18 ft. centres. The façade must have a central entrance and one at each corner. The height of the ground floor is 18 ft. (floor to floor) and four floors of not less than 14 ft. The vertical wall surface must not exceed 80 ft. in height, but a floor or floors may be arranged in the roof. A roof garden is to be provided.

A Repertory Theatre.—(Third year; 3-week subject.)

A theatre is to be built which is intended chiefly for the production of drama. An essential of its character is to be simplicity and refinement. The auditorium is to be arranged in such a manner that perfect hearing and vision can be obtained from all parts. The decoration must be such that attention is not distracted from the stage. Hygienic conditions and the possibility of economical renovation are to be considered. Site.—The site faces a large open square formally treated with fountains, trees, &c. It is bounded on two sides by parallel roads 70 ft. in width; at the back there is an existing party wall 65 ft. high. Frontage, 120 ft., depth 200 ft. Accommodation.—The theatre is to seat not less than 1,200; approximately one-third of these are to be accommodated in a single gallery. There will be no pit, and the floor of the auditorium would be best arranged as a continuous bank of seats. Access to all parts is to be obtained from the main entrance with adequate cloakroom accommodation; these should be in such a position as to avoid crushing at the exits either from the auditorium or to the streets. The booking offices are to be placed in this hall. Immediately above there is to be a large lounge with refreshment bars opening from it. These will serve all parts of the house. Lavatory accommodation is to be provided both at floor and gallery levels. The Stage.—The portion visible from the auditorium must not be less than 45 ft. sq. There must be, in addition, ample room at the wings and back for scenery, &c. The clear height above should be equal to the height of the proscenium opening. A special entrance is to be provided. Attention should be paid to the comfort and convenience of the actors. Accommodation.—16 dressing rooms (100 ft. super) 8 for each sex, with lavatory accommodation; two large dressing rooms for 30 persons each (16 sq. ft. per person); wardrobe rooms and lavatory accommodation in connection with each; carpenter's room and switchboard room adjoining stage—the latter should have the whole stage in view; band room (30 performers); two small offices near stage door allowing proper supervision and control. An office for the manager should be situated in front of the house.

An Alpine Monastery.

The programme for this design was given in our last issue.

Beaumont College War Memorial.

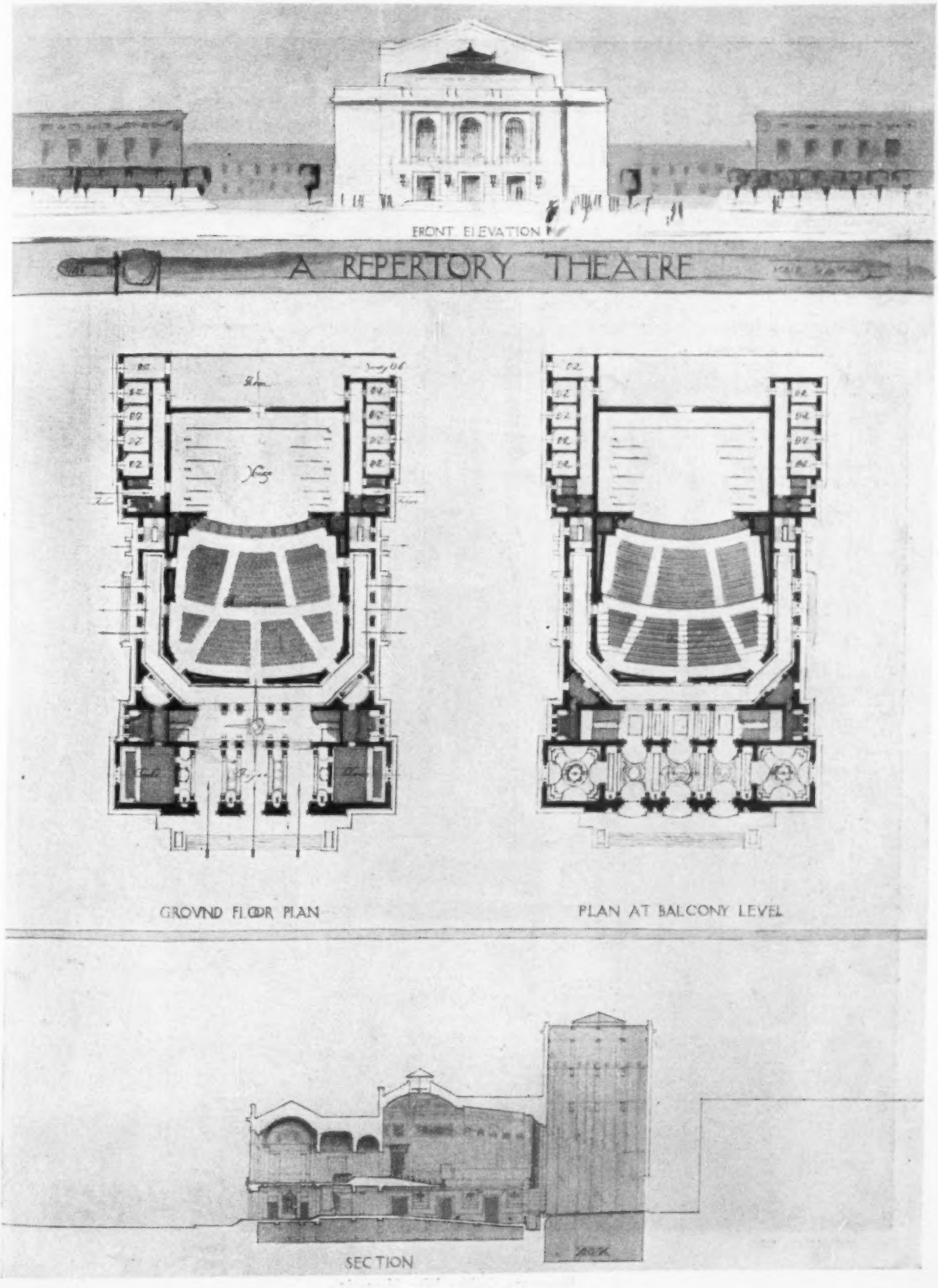
Our illustration of Beaumont College War Memorial, by Messrs G. Gilbert Scott, R.A., and A. Gilbert Scott, is from the exhibit at this year's Royal Academy Exhibition.

"Rushymead," Coleshill, Bucks.

We also illustrate "Rushymead," Coleshill, Bucks, for which Messrs. A. Dunbar Smith, F.R.I.B.A., and Cecil Brewer are the architects.

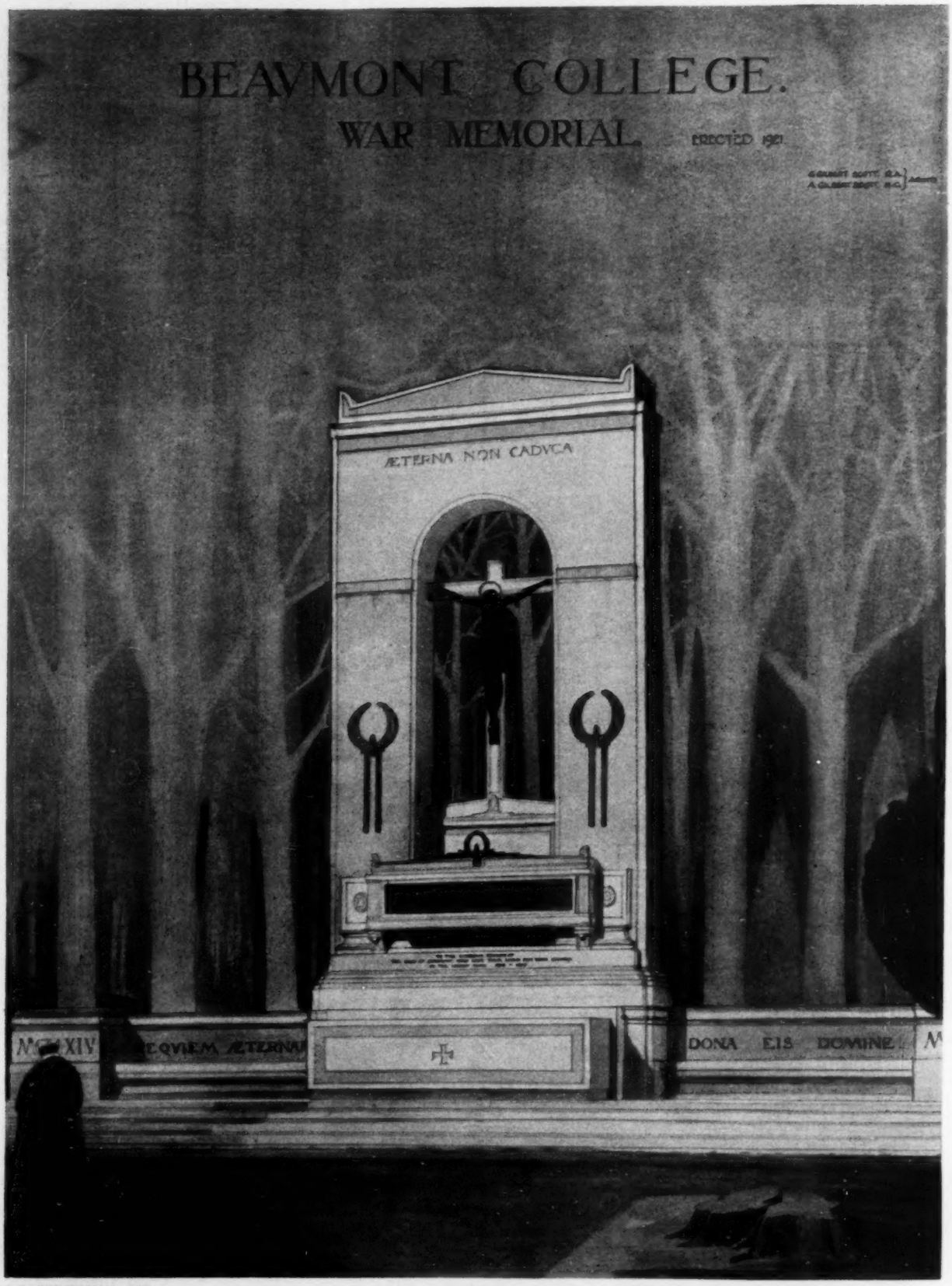
Architectural Association School Students' Work.

Twelve-hour Sketch Design, by Mr. J. C. Shepherd (Fifth-Year Student).



Design for a Repertory Theatre. By Mr. S. C. Kirby (Third-Year Student).

Architectural Association Schools Students' Work. (*See p.* 234.)



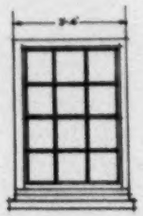
R.A. EXHIBITION, 1922.

Beaumont College War Memorial.

Messrs. G. Gilbert Scott, R.A., & A. Gilbert Scott, Architects.

PROPOSED COTTAGES AT PRINCETOWN

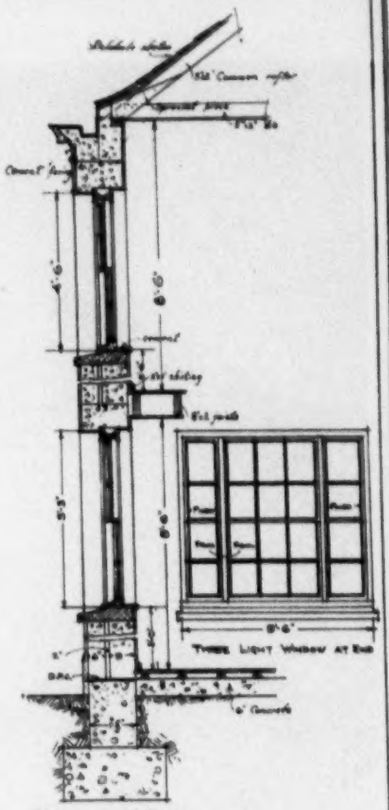
FOR THE DUCHY OF CORNWALL



FIRST FLOOR WINDOW

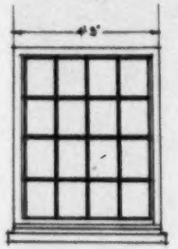
SCALE FOR DETAILS.
HALF AN INCH = 1 FOOT.

REAR ELEVATION



THREE LIGHT WINDOW AT END

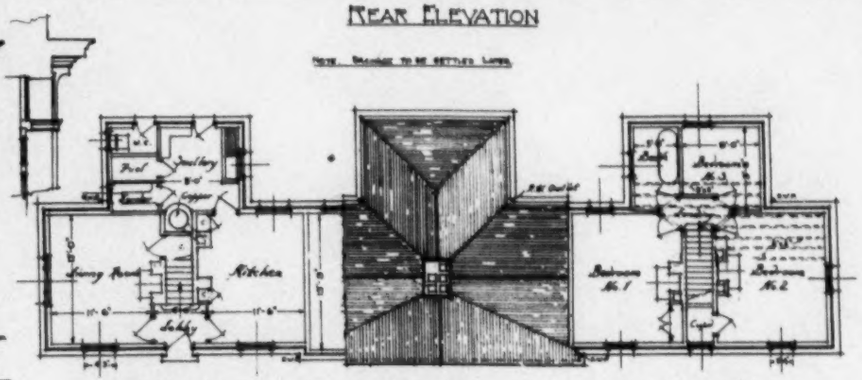
SECTION THRO' FRONT



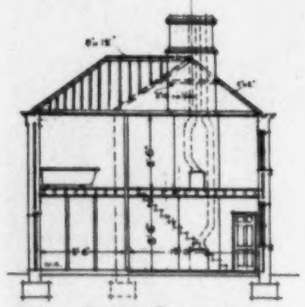
GROUND FLOOR WINDOW

FRONT ENTRANCE

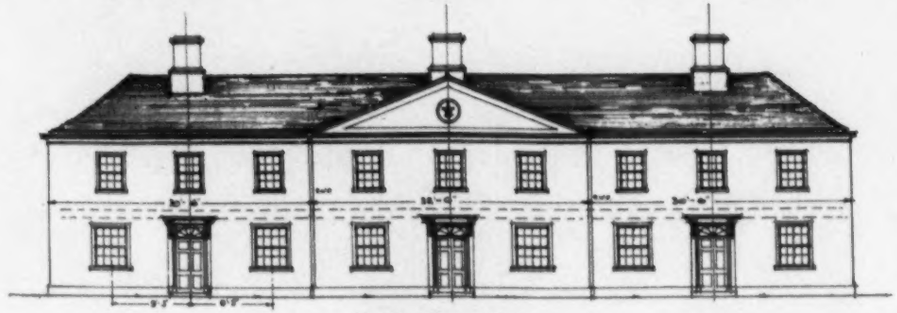
NOTE. DRAINAGE TO BE SETTLED LATER.



GROUND FLOOR PLAN — ROOF PLAN — FIRST FLOOR PLAN

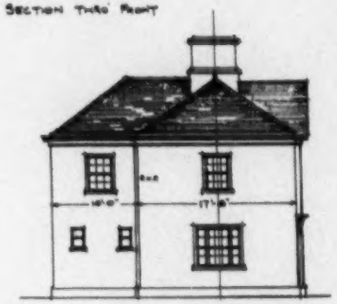


CROSS SECTION



FRONT ELEVATION

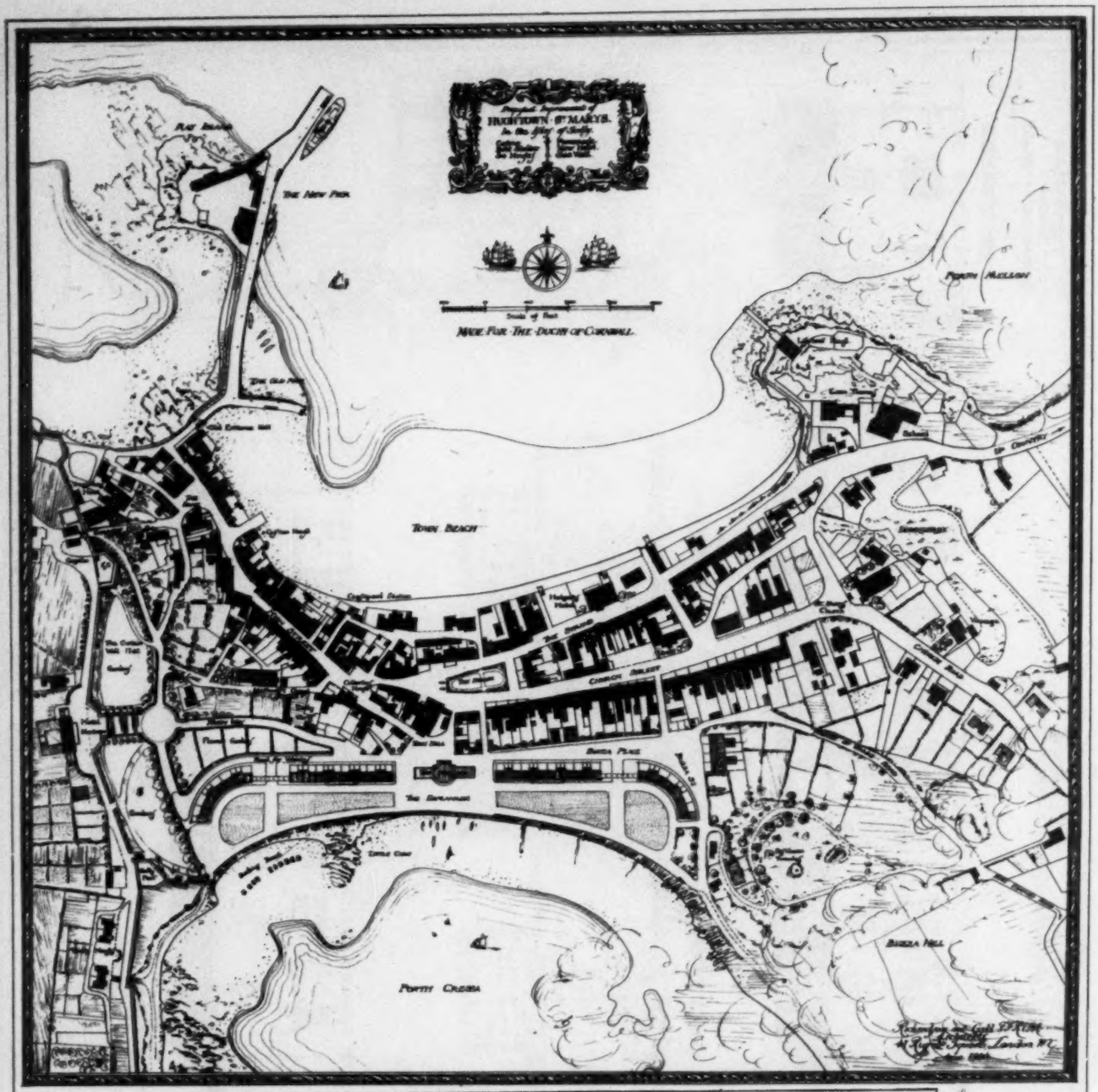
SCALE OF FEET

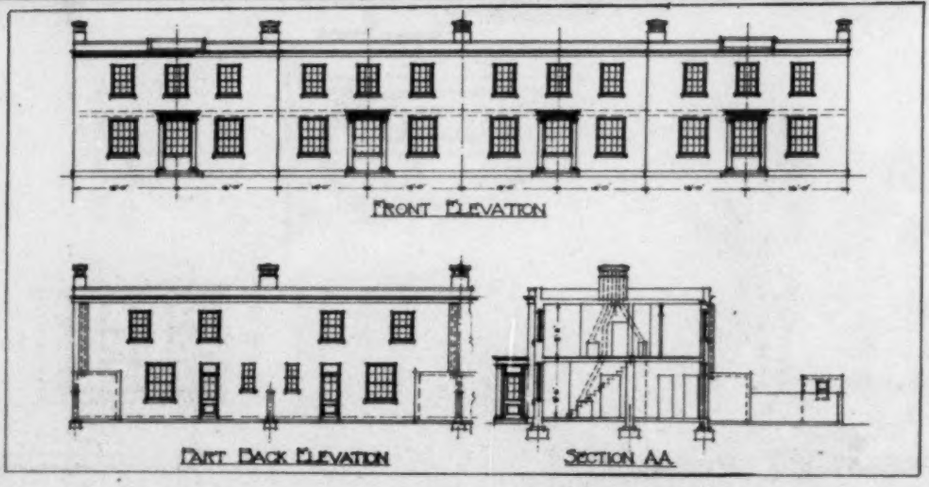


END ELEVATION

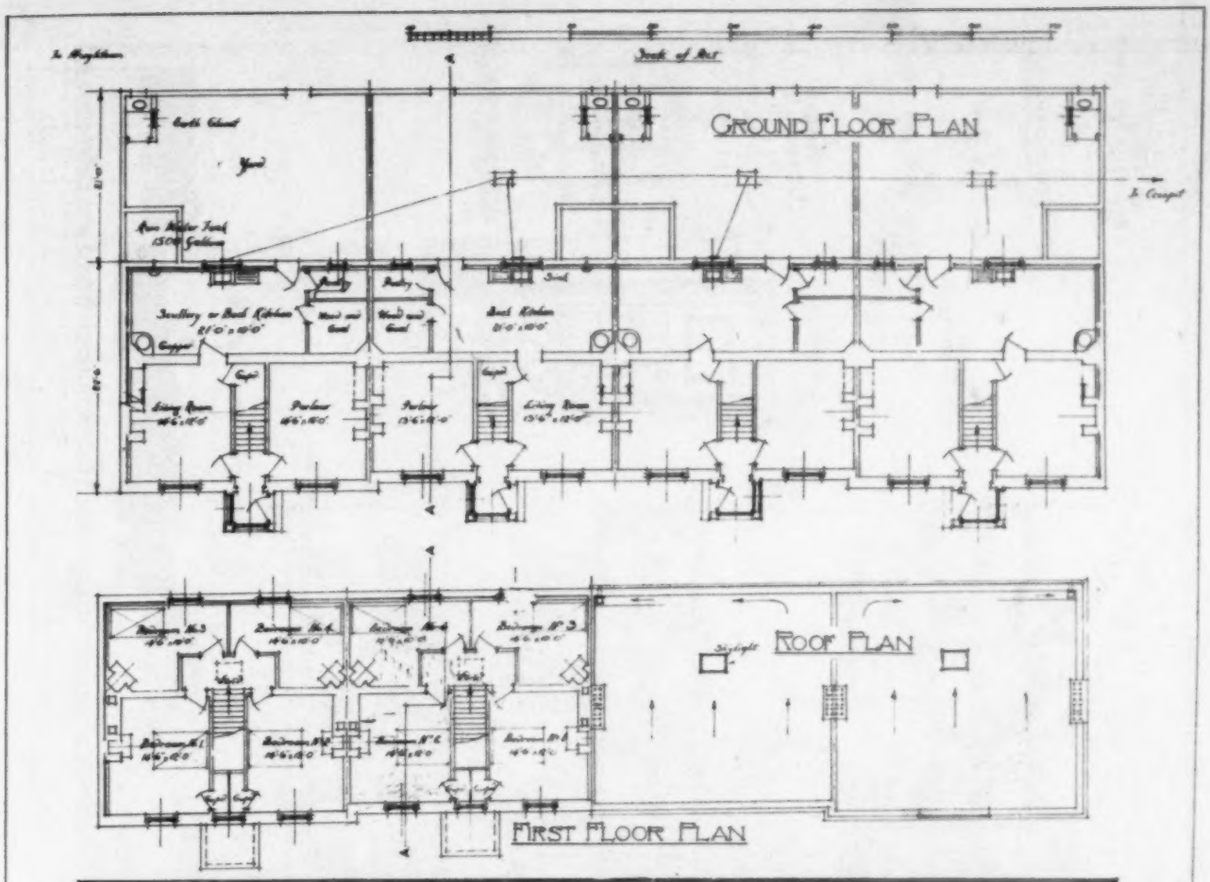
RICHARDSON AND GILL FF.R.I.B.A.
ARCHITECTS
41 RUSSELL SQ. LONDON

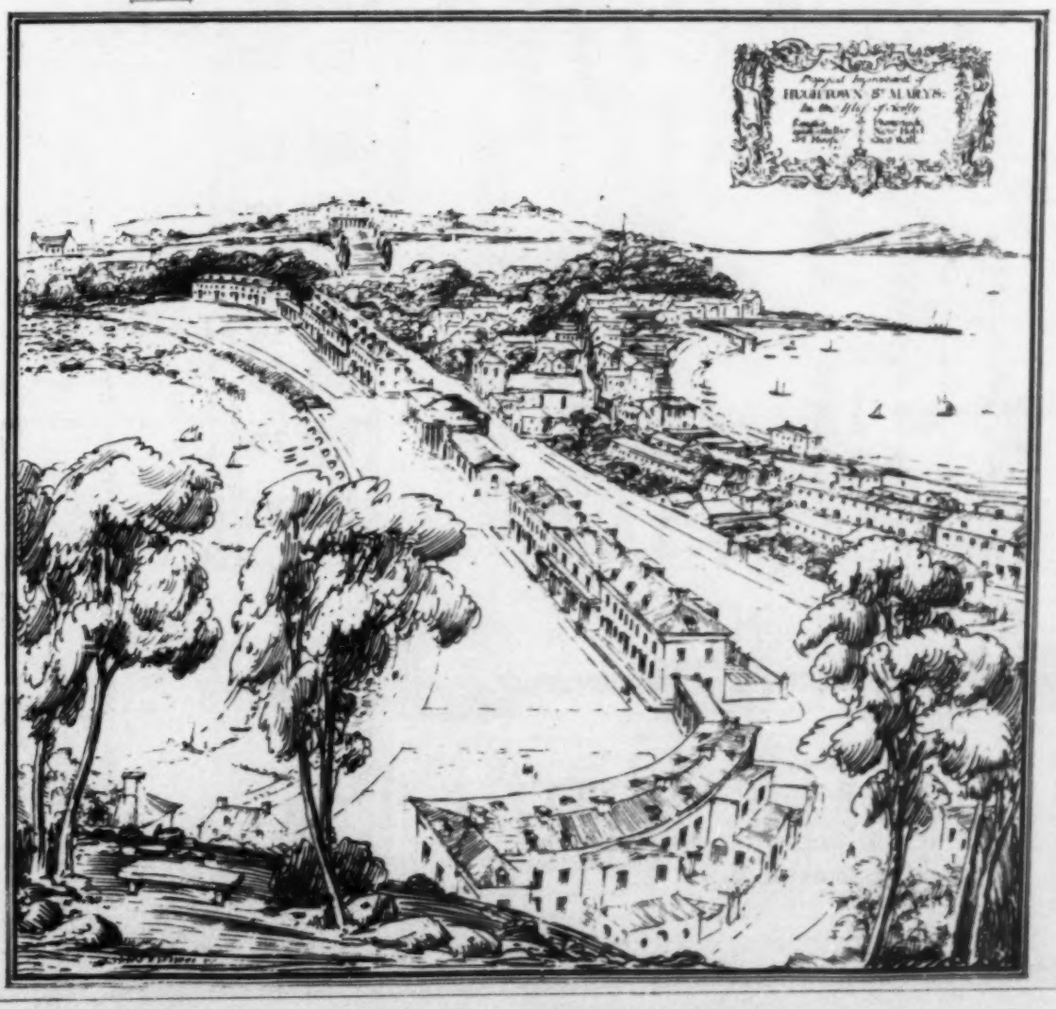
MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS





COTTAGES, LONGSTONE DOWN. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS.



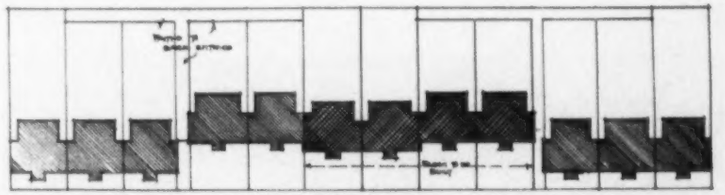


COTTAGES, LONGSTONE DOWN. MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS.

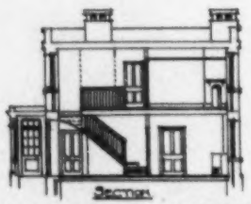
COTTAGES AT PORTH LOO, ISLES OF SCILLY

FOR THE DUCHY OF CORNWALL.

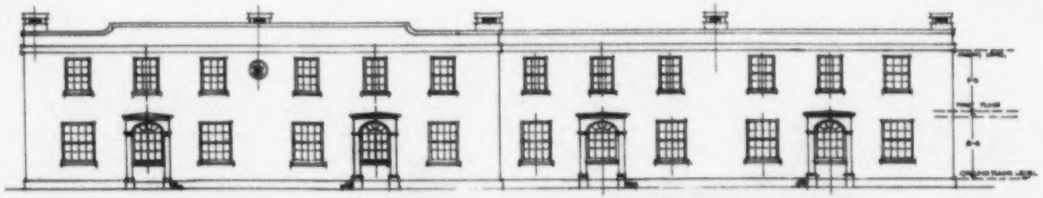
SCALE: 1IN - 8 FEET



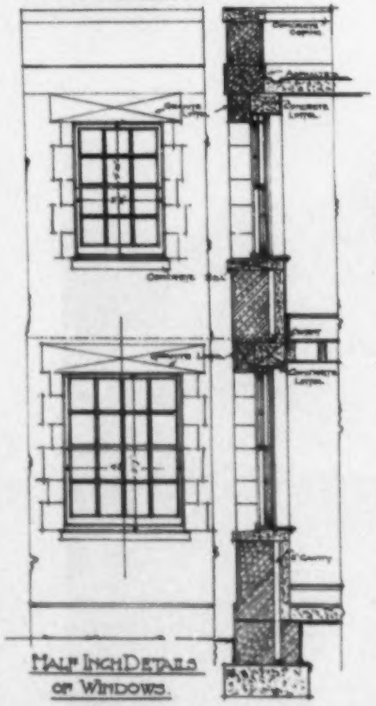
BLOCK PLAN, 1 IN = 32 FT.



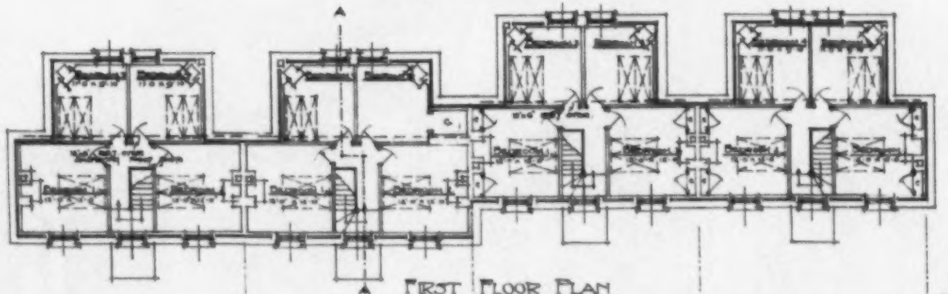
SECTION



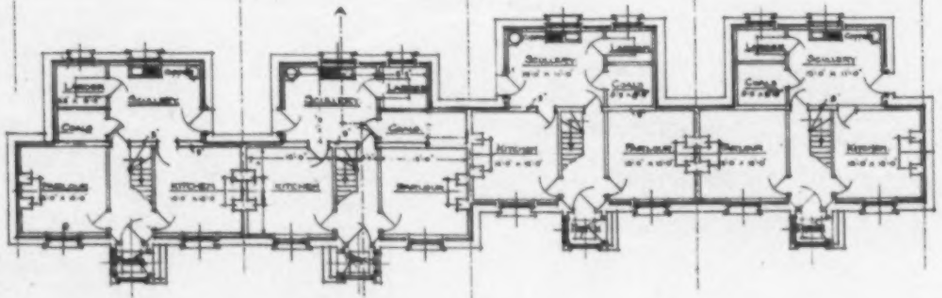
ELEVATION



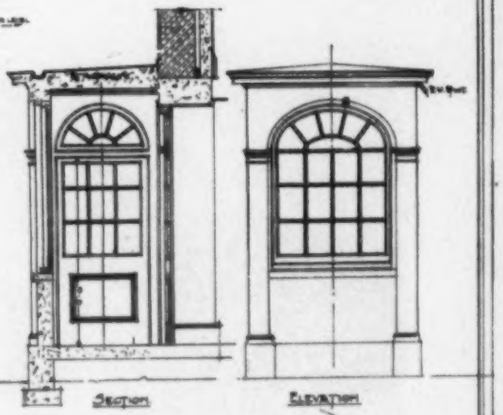
HALF INCH DETAILS OF WINDOWS.



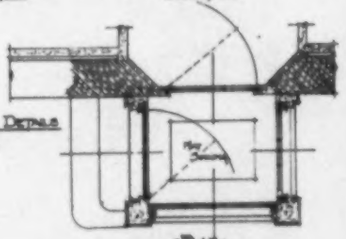
FIRST FLOOR PLAN



GROUND FLOOR PLAN



SECTION ELEVATION



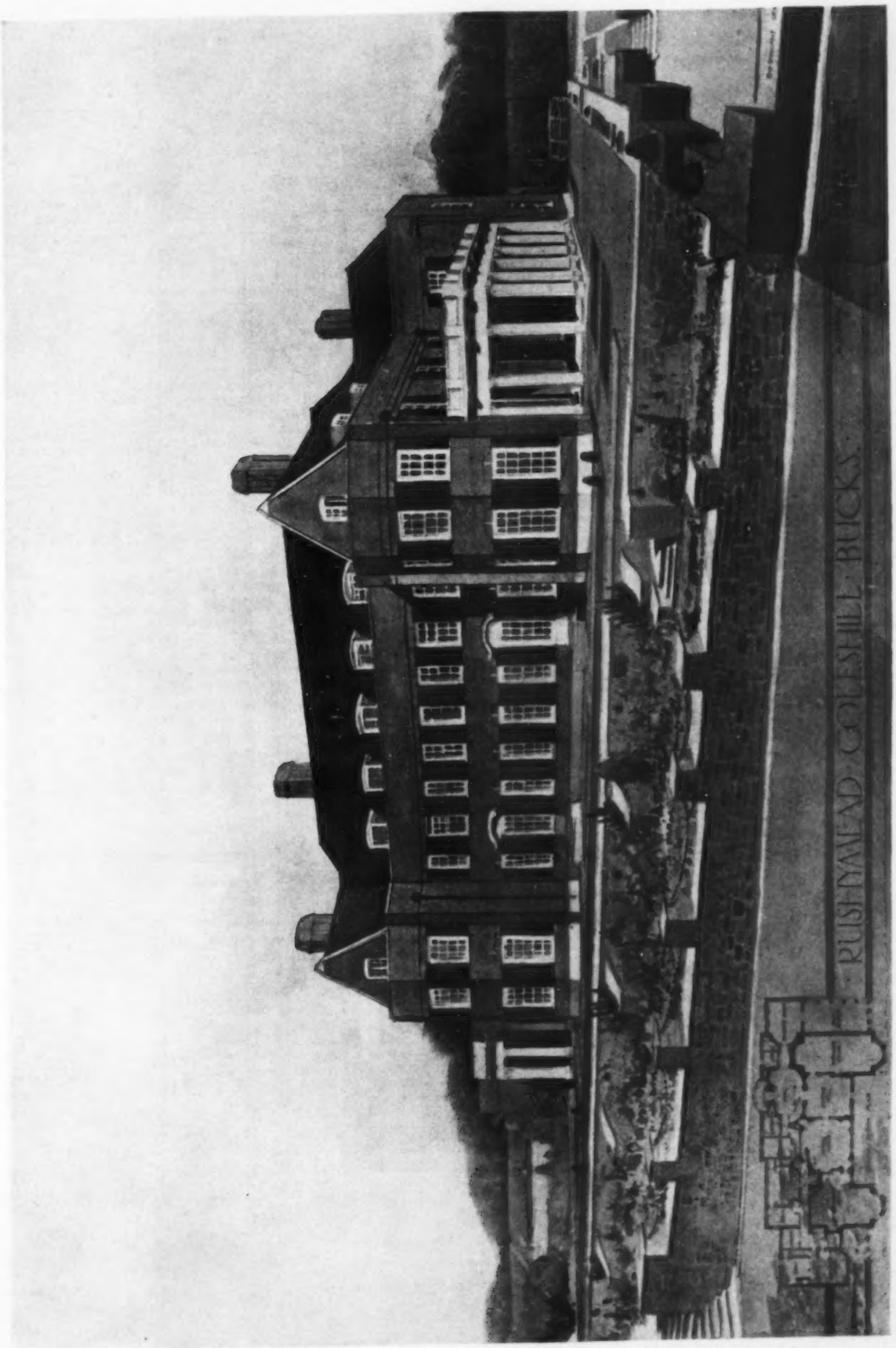
HALF INCH DETAILS OF PORCH

PLAN

RICHARDSON & GILL, FF.R.I.B.A. ARCHITECTS, 9 RUSSELL SQ. W.C.

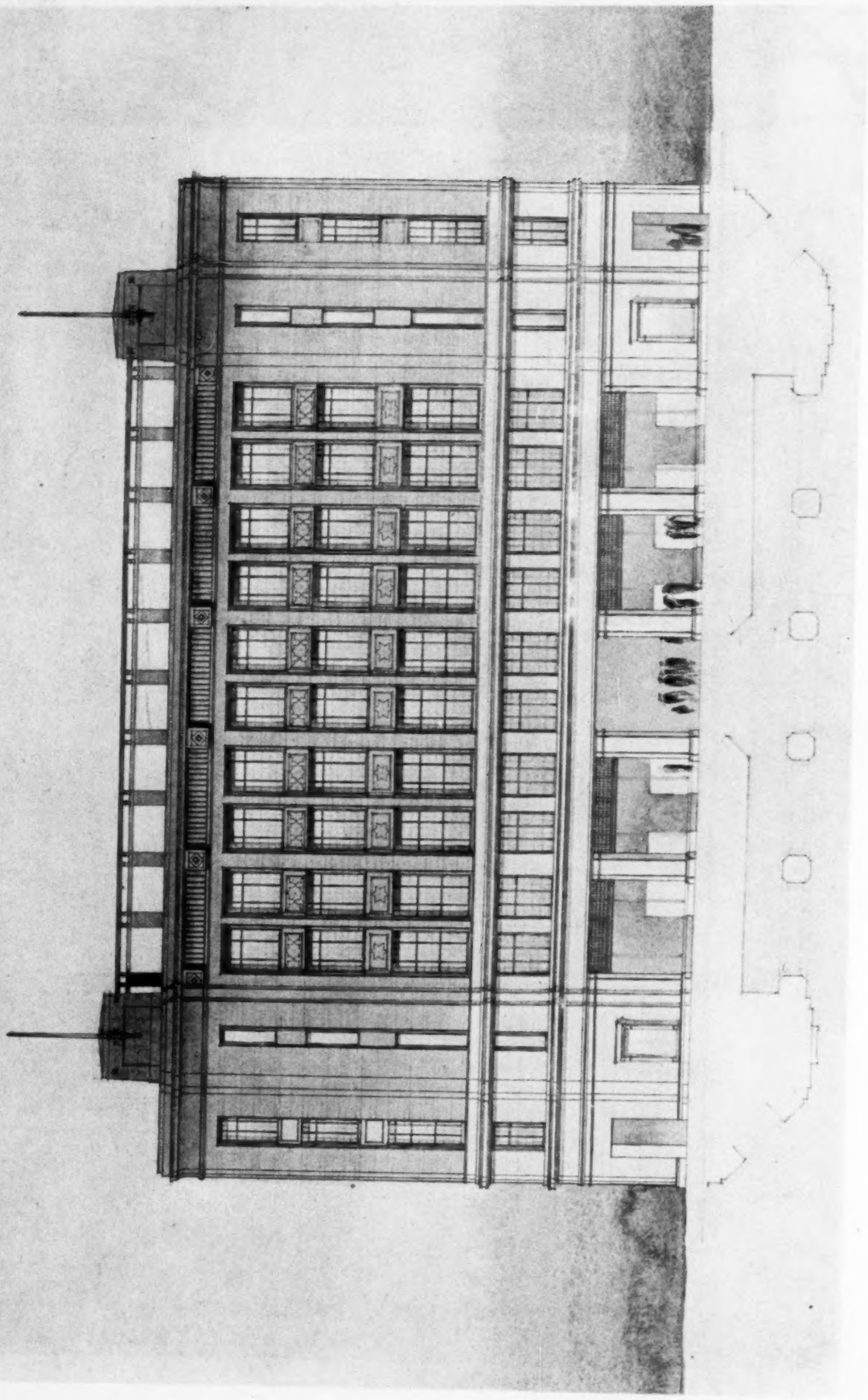
THE BUILDER, AUGUST 18, 1922.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., ARCHITECTS.



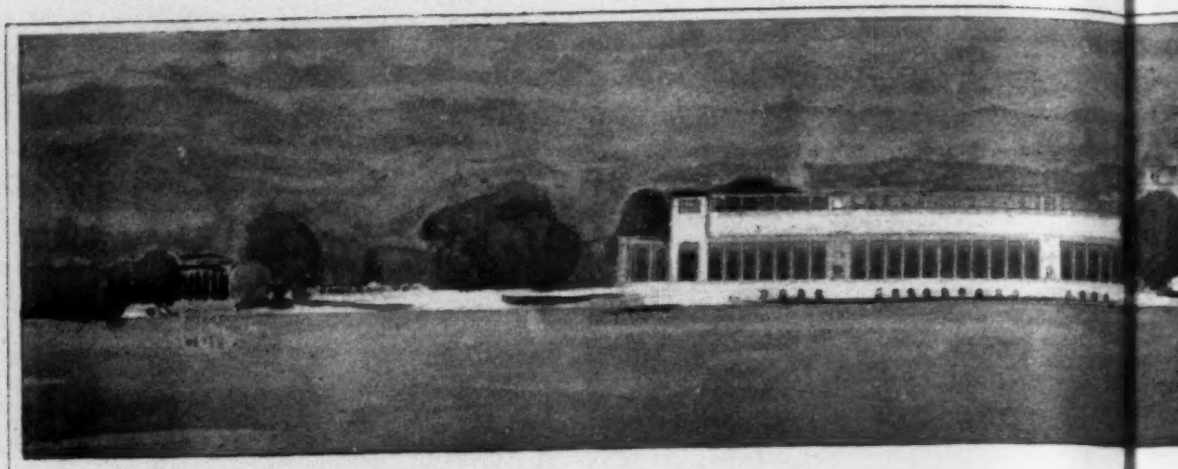
Messrs. A. Dunbar Smith, F.R.I.B.A., and Cecil Brewer, Architects.

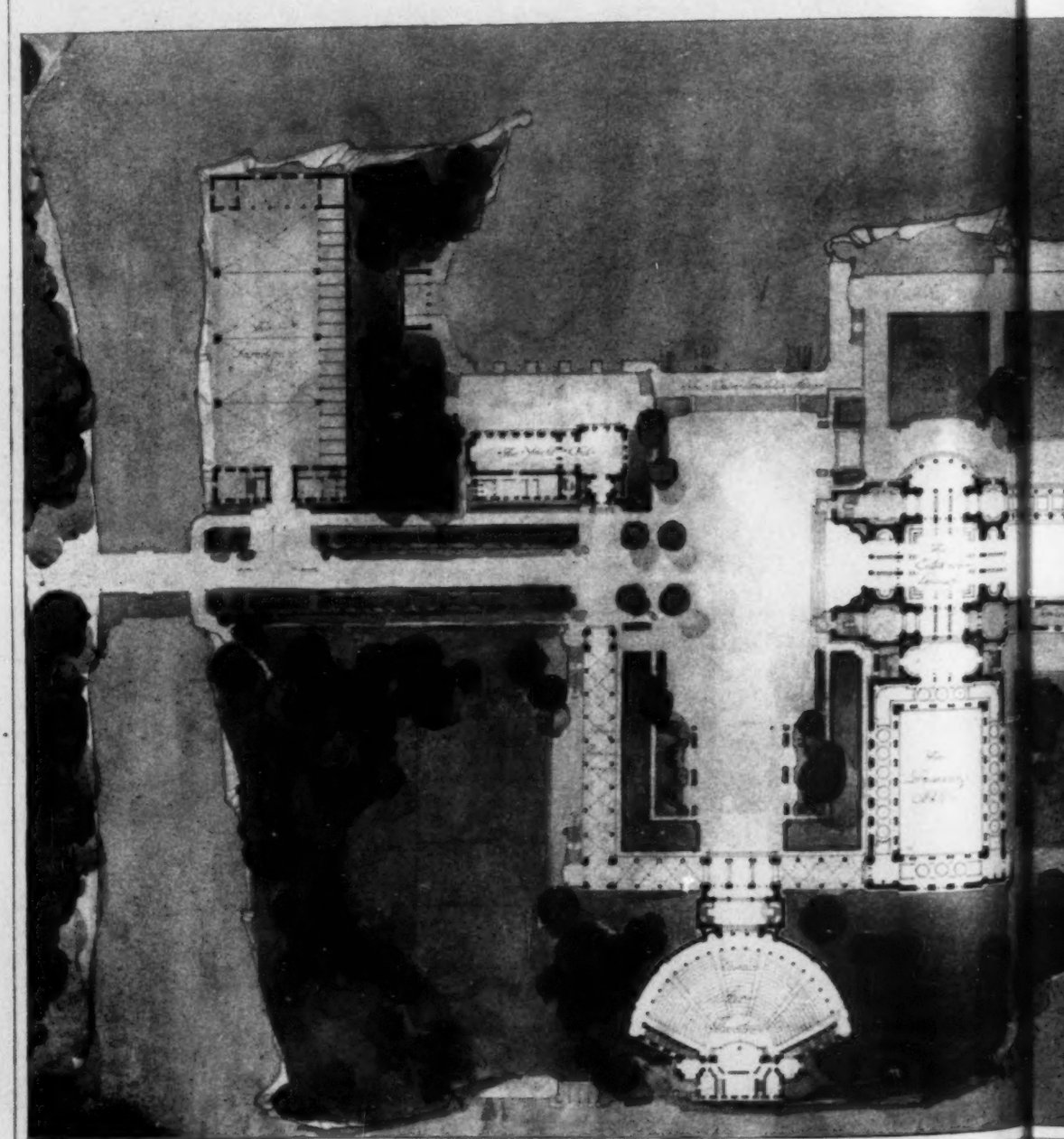
FACADE TO A LARGE STORE.



Design by Mr. S. C. Kirby (Third-Year Student).
Architectural Association Schools Students' Work. (*See p.* 234.)

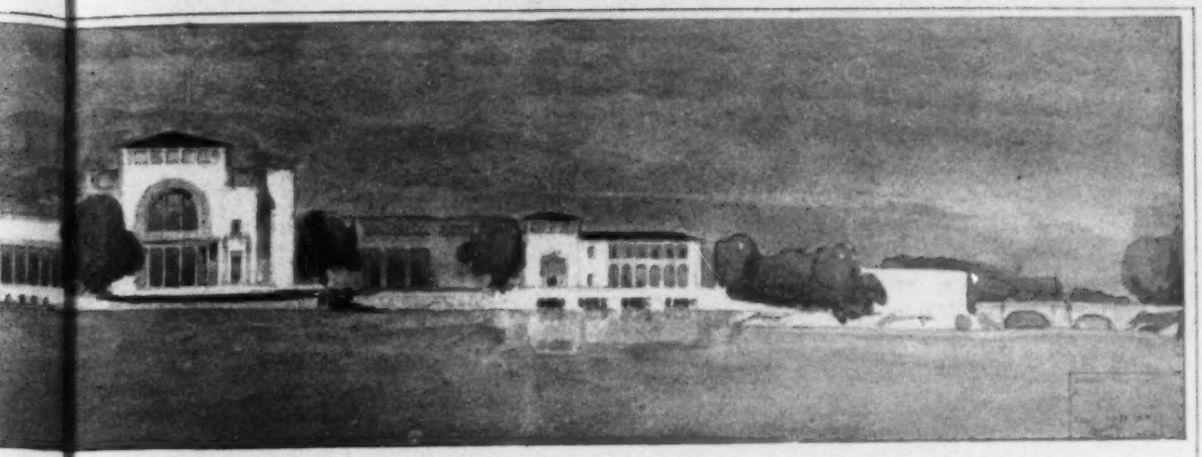
Architectural Association Schools Students' Work. (See p. 194.)

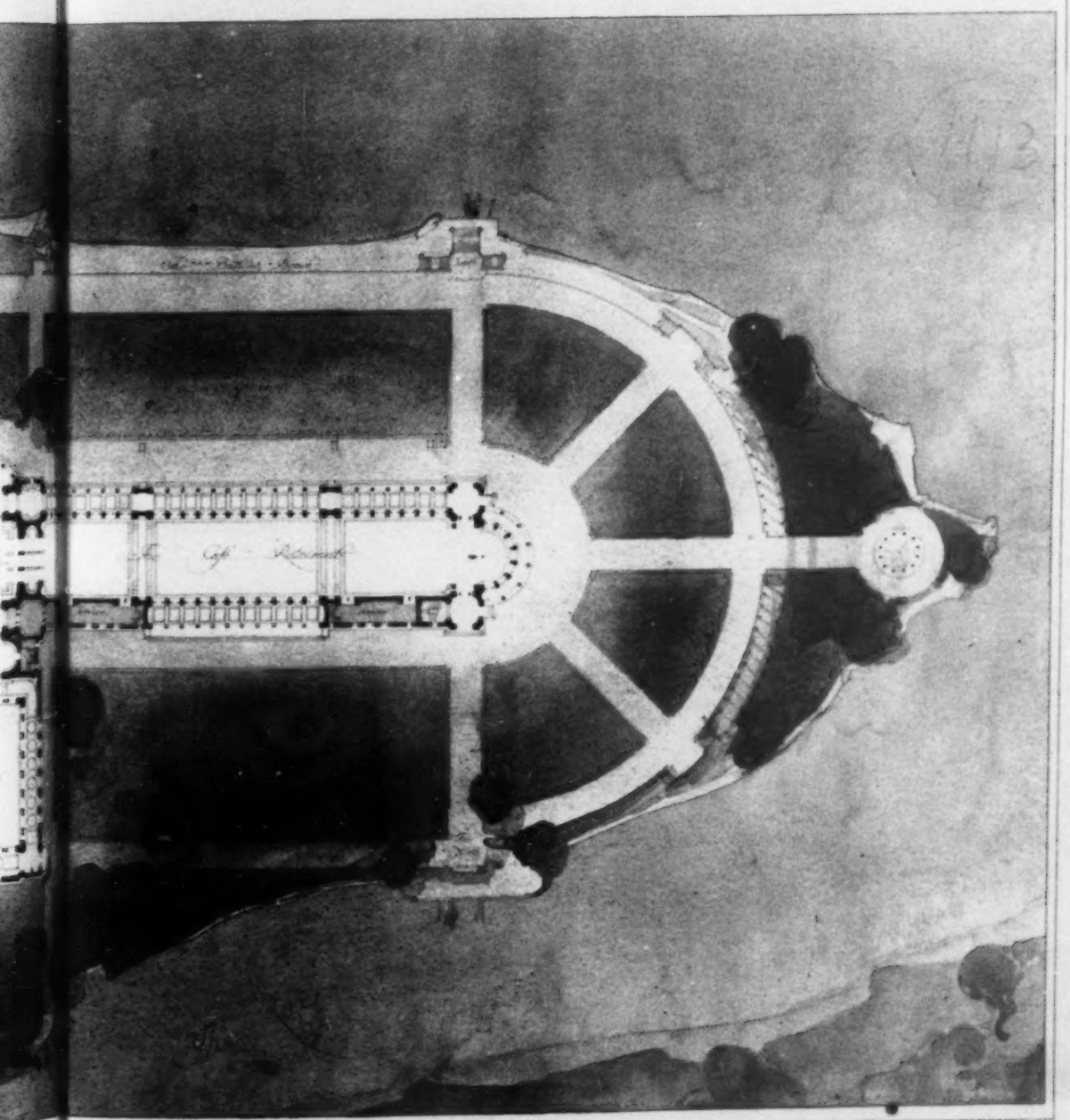




ARCHITECTURAL ASSOCIATION SCHOOLS STUDENTS' WORK.

A PLEASURE ISLAND. DESIGN





LAND. DESIGN BY MR. J. C. SHEPHERD.

TINTERN ABBEY.

BY WILLIAM HARVEY.

THE ruins of Tintern Abbey stand at the foot of steep hills, bordering the Wye Valley, the focal point of many an archæological pilgrimage or the objective of a day's motor jaunt from the neighbouring towns.

The great roofless walls of the thirteenth-century church can be looked down upon from the hillside roads approaching the village, and every process of repair applied by the custodians to the heavy and dangerously overbalancing masses of masonry can be observed and commented upon by all comers.

An earlier generation, not overblessed with antiquarian sentiment, regarded the building as a quarry in which the stones were to be found all ready squared, and the work of demolition inaugurated by King Henry VIII was continued in the interests of domestic architecture and the solution of the local housing problem. England is commencing to realise the value of her historic monuments and the quarrying has been stopped, though there are still critics to be found who begrudge the cost of maintaining the "useless" ruins.

Among more instructed circles are some architectural stoics, who would have us believe that they love the beauty of these old works of art yet profess that they would prefer to see them crumble to pieces of old age rather than they should be held together by means tainted with any suspicion of modern structural science, especially if these means are to be applied by a Government department whose work they condemn as wrong in principle from first to last. Their idea seems to be that if repairs are really necessary they would be executed far better under the care of a good architect in independent practice.

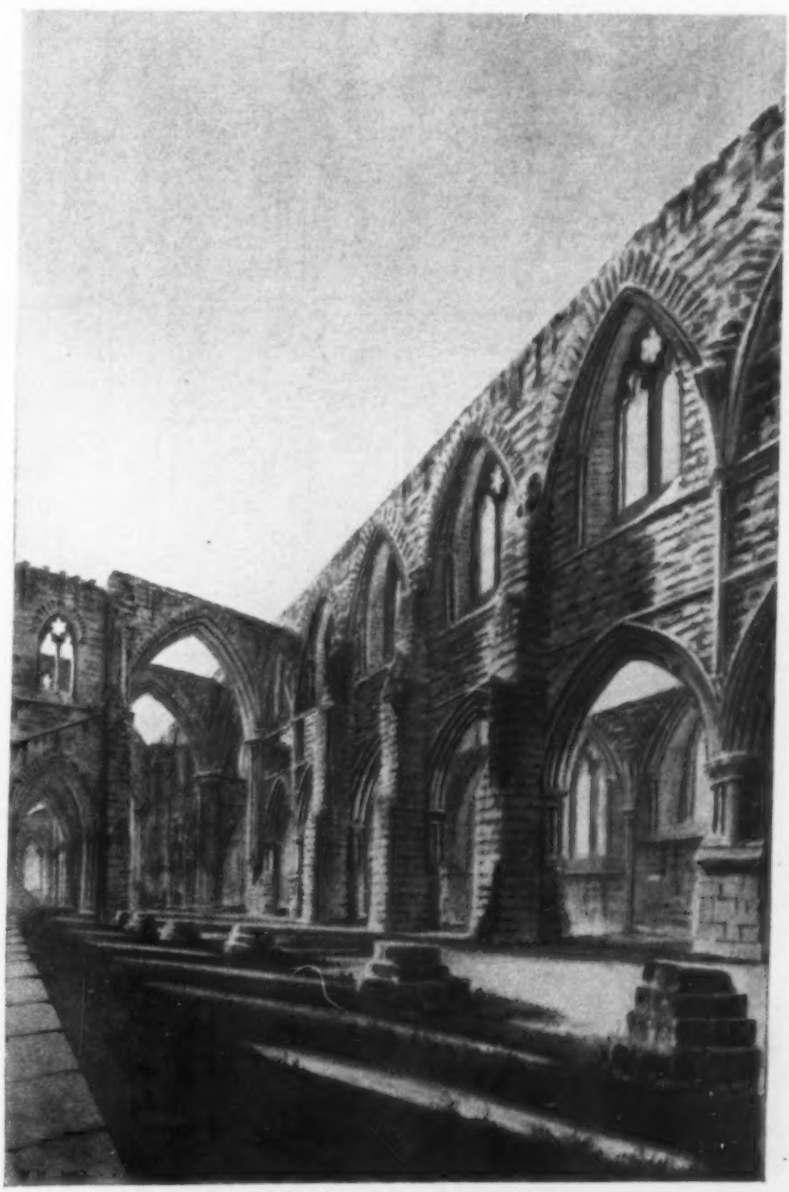
However much we may pretend to hate the administrative departments we create for ourselves by our own attempts at democratical government, experience does not bear out the claim that the private architect is best fitted for the conservation of ancient monuments. Almost every ruin which passes into the control of H.M. Office of Works' Historic Buildings Branch has been treated previously to repair of some sort or another under expert architectural advice, but the sorry state in which most of them are handed over is sufficient evidence of the inadequacy of the system. The private architect, through no fault of his own, is weak just where the Government department happens to be strong; it enjoys facilities for prolonged investigation and research, and the assistance of experts in archæology, in scientific building construction, and in the theory of the mechanical stability of structures, facilities that do not fall usually within the scope of the private practitioner. An idea for the repair of some part of a dangerous ruin can be thrashed out in every detail of archæology, artistic propriety, public policy, structural stability, and financial possibility, by separate experts of undoubted skill acting in conjunction with one another, under the guidance of a sound tradition already established, and with the help of experienced masons specially trained for the difficult and intricate work.

The ruins of Tintern Abbey, when taken over by the Historic Buildings Branch, presented a patched appearance. A great arch of the tower had been rebuilt with the obvious sacrifice of historical interest, other parts had been smeared over with cement, and large masses of untreated wall threatened immediate collapse. The growth of trees and ivy on the wall tops had been removed in some places and a dismal and slippery coat of cement applied to the upper surface to keep out the rain. Roots of plants and trees had been left in the centre of the wall, however, and their new growth was already breaking away this thin protecting crust.

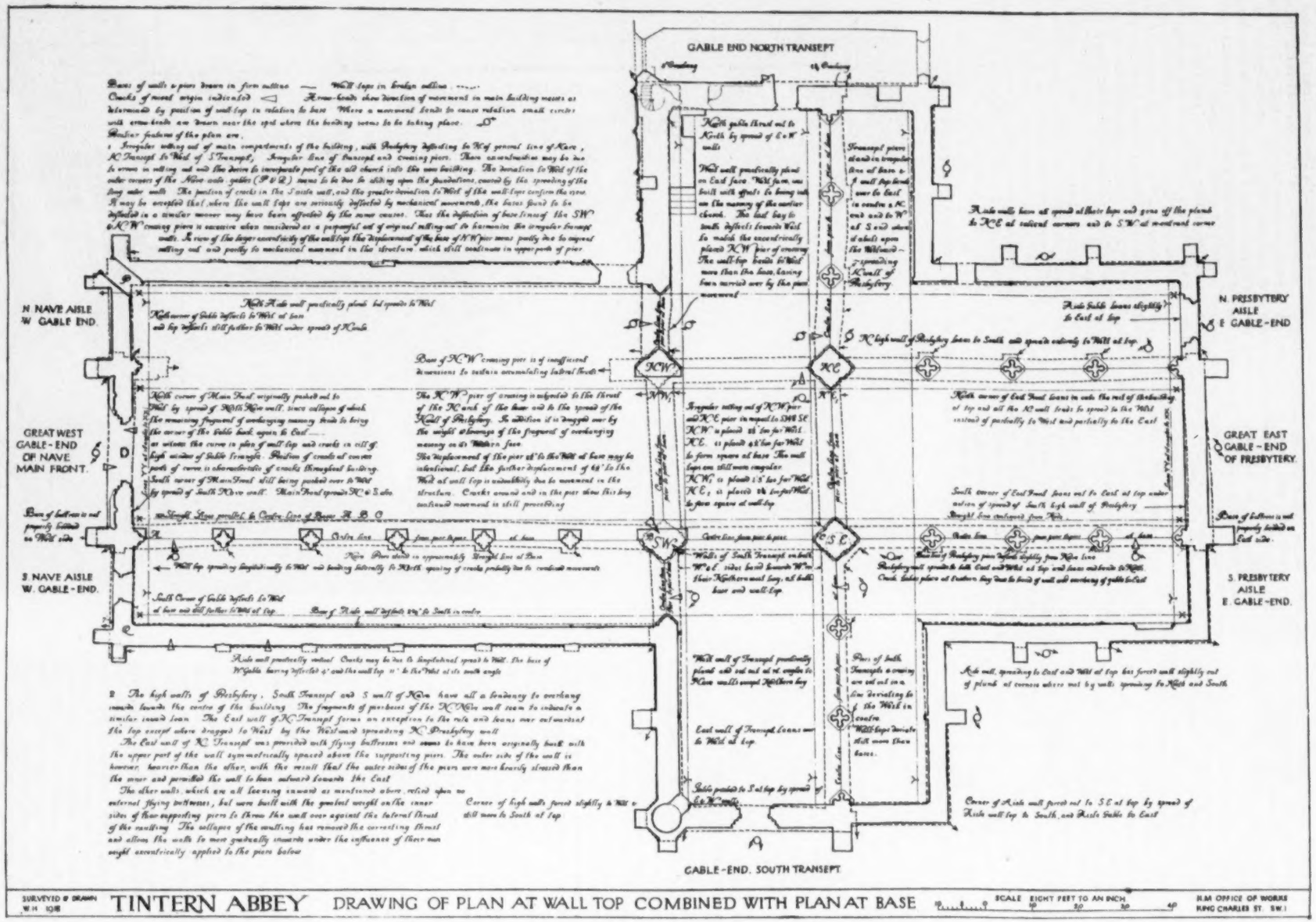
In some places where new masonry had been inserted hasty construction had permitted it to shrink on its foundations and lose contact with the work it was intended to support. Such works of underpinning demand extraordinary care and can only be carried out satisfactorily when every difficulty is foreseen and provided for in advance, or when the custodian has opportunities of continuing to watch the progress of the building and take additional measures as the necessity for them becomes apparent, facilities which are seldom enjoyed by the private architect.

An ancient monument, considered in its mechanical aspect, is generally a dangerous structure and the process of "leaving it alone to drop to pieces when its time comes" would not be permissible in the interests of public safety, even if the method were satisfactory in other respects. The problems of holding a ruin together do not come within the limits of ordinary architectural practice. A Gothic building with its articulated system of vaulting surfaces, ribs, piers, buttresses, and pinnacles is a thing of life and elasticity just as long as it is complete, with all its balanced interaction of thrust and counterpoise. Its partial and unbalanced fragments, however, are entirely different in their mechanical action, and are liable to form terrible traps for haste and inexperience. Each lop-sided mass tends to move and fall towards the more heavily-loaded face. Walls spread, bend, split and crack under the thrust of their arches as well as by the action of sun and frost. The ruins, robbed of their rational balance of parts, accumulate damaging stresses by slight successive movements and tend towards an ultimate collapse.

A preliminary survey of the Abbey ruins with a view to the discovery of the movements and tendencies of its main masses is itself a costly item in labour and time, and the repairs undertaken before the buildings passed into the custody of the Office of Works seemed to indicate by their partial and fragmentary nature that the mechanical possibilities of the structure had not been grasped as a whole. Very excellent plans had been made of parts about ground floor level, but these drawings aimed at a statement of archæological rather than statical data, while to deal adequately with an ancient monument the opportunity for investigating both sides of the question is necessary. The Historic Buildings Branch supplied the missing information by undertaking for itself a new survey of the



Tintern Abbey from N.W. Angle of Nave, showing Three Proposed Buttresses—Abandoned in favour of a Scheme of Reinforcement.


GABLE END NORTH TRANSEPT
N. NAVE AISLE W. GABLE END.
GREAT WEST GABLE-END OF NAVE MAIN FRONT.
S. NAVE AISLE W. GABLE-END.
N. PRESBYTERY AISLE E. GABLE-END.
GREAT EAST GABLE-END OF PRESBYTERY.
S. PRESBYTERY AISLE E. GABLE-END.
GABLE-END. SOUTH TRANSEPT
TINTERN ABBEY DRAWING OF PLAN AT WALL TOP COMBINED WITH PLAN AT BASE
SCALE EIGHT FEET TO AN INCH
H.M. OFFICE OF WORKS KING CHARLES ST. S.W.1

Survey Plan Prepared to Ascertain the Statical Condition of the Ruins.

Abbey Church, in which the plan at ground level is contrasted with the plan of the wall tops superimposed in the same diagram.

In connection with this survey the vertical faces of the walls were searched for evidences of movement and the principal lines of fracture were marked upon the plan. Where scaffolds were not available, owing to their great cost, the examination was made by means of a block and tackle, and the resulting information proved to be of great service in indicating the lines of future repair.

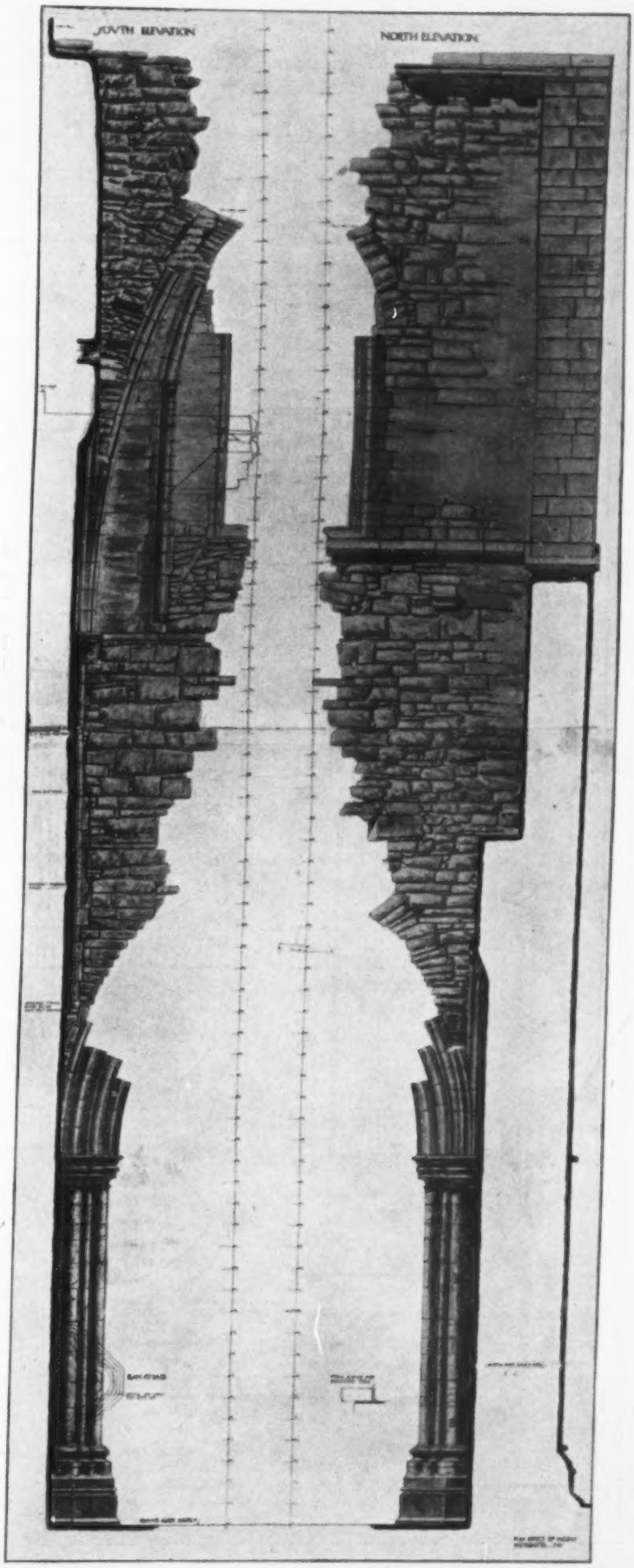
The ruins of the Abbey Church consist of small piers heavily loaded by walls reaching to 68 ft. in height, and the survey plan showed the dangerous interaction of different parts of the ruins; a defect or a repair at one point was found to affect portions of the building at a considerable distance from it. The upper parts of overhanging walls, in particular, were found to be acting similarly to beams subjected to horizontal pressure with curves of contrary flexure and cracks in the tension side, as might be expected in a structure composed of stone and mortar.

A mass of overhanging masonry at the west end of the building was needled up for consolidation by grouting and pointing at the time the survey was completed, and the withdrawal of the needles was made the occasion to test the value of the newly-acquired information. If the theory of interaction was correct the pull of the overhanging masonry should make itself felt soon after the temporary support of the steel needle was removed. In anticipation of the test a tell-tale of substantial blocks of stone, set in cement, was constructed at a point of contrary flexure in the adjoining west gable and allowed to set thoroughly before the needles were lowered on their sand boxes. The faint hair crack which fractured the solid masonry of the tell-tale some days after the needles were loosened indicated the correctness of the prediction, and pointed to the desirability of additional tensile reinforcement throughout the wall tops if the buildings were to be conserved for any considerable length of time.

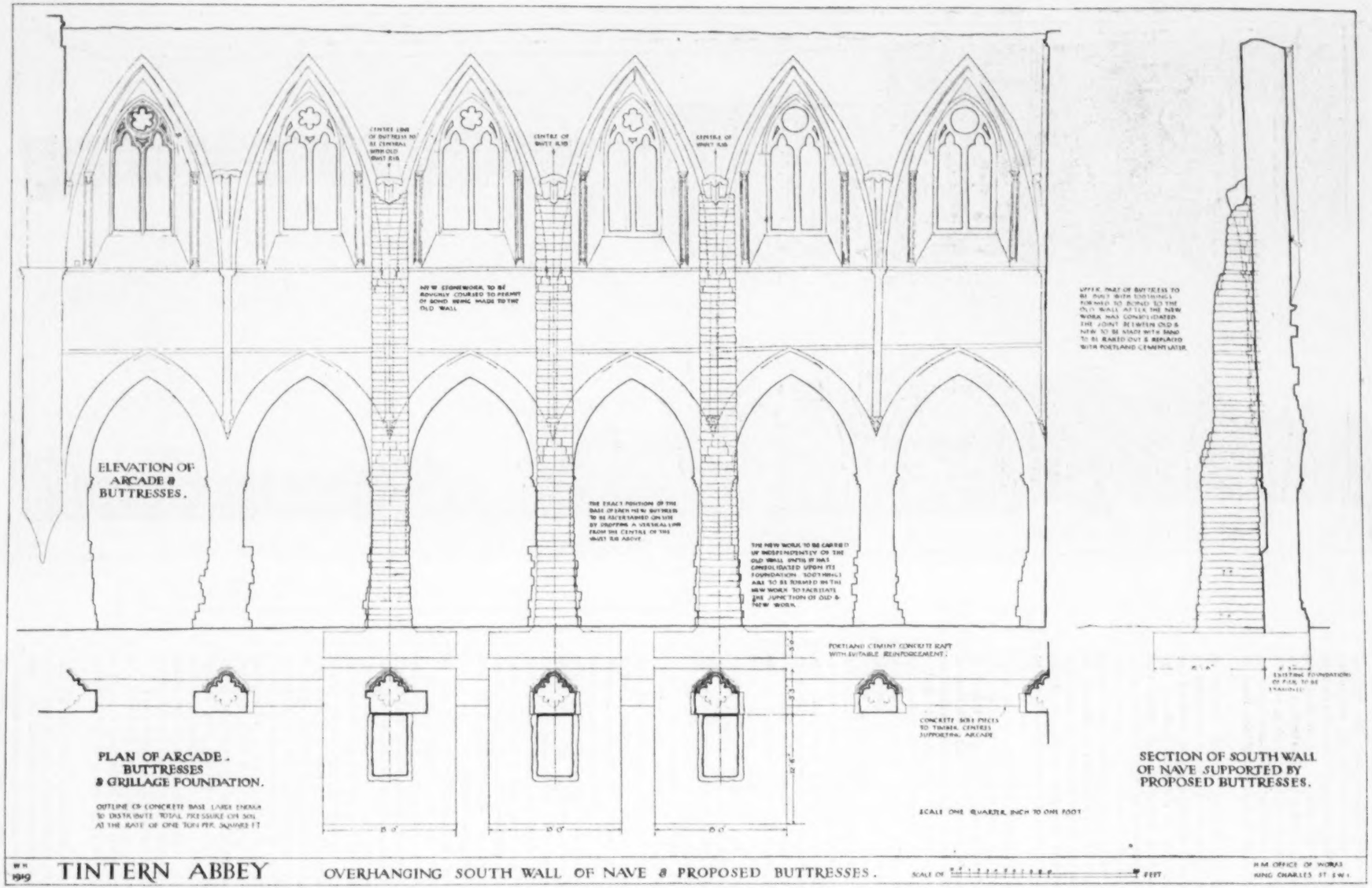
Further investigation in connection with the treatment of overhanging masonry at the central tower confirmed the results of the former experiment, and a system of chainage in reinforced concrete was introduced in trenches cut in the rubble core of the wall tops to supply the defective tensile connection. As a possible alternative, a scheme of buttressing had been devised, but every effort was made to avoid or at least postpone the introduction of new buttresses in the interior of a mediæval church, where their appearance would be discordant with the remnants of the original design.

Criticisms have been levelled at the use of reinforced concrete in the conservation of a ruined church on the score that it is a material foreign to the usages of Gothic times, that it will tear free from its anchorages, or that it will rust and burst the masonry. The archæological objection might hold good if the reinforced concrete were obtruded to the detriment of the general effect, though the use of iron ties and bond timbers embedded in the rubble cores of old walls gives a precedent for the introduction of tensile members in inconspicuous positions. The possibilities of bursting free or of rusting away are inherent in reinforced work, but are subject to calculations and appropriate treatment in detail. The use of the new tensile material is resorted to by the Historic Buildings Branch only when the state of the ruins demands more support than can be obtained from grouting and pointing the shattered and overhanging walls. It is then preferred to apparent external props or buttresses since it is less disfiguring to the appearance of the building as a whole.

A buttress must necessarily cover up all the old work that it presses upon and in any case would intrude an extraneous element into the old design. Reinforcement in metal and concrete, when suitably introduced, merely replaces the loose rubble, roots and soil of the interior of the wall without affecting the position of the wrought stonework of its exterior faces, for the little external work that has perforce to be disturbed is replaced in position stone by stone.



Tintern Abbey: Detail of Overhanging Masonry at West End of Building.
PREPARED AS A GUIDE TO THE MASONS IN REPLACING ANY STONES WHICH MIGHT HAVE TO BE TEMPORARILY REMOVED.


ELEVATION OF ARCADE & BUTTRESSES.
NEW STONEWORK TO BE ROUGHLY COURSED TO PERMIT OF BOND BEING MADE TO THE OLD WALL
THE EXACT POSITION OF THE BASE OF EACH NEW BUTTRESS TO BE ASCERTAINED ON SITE BY DROPPING A VERTICAL LINE FROM THE CENTRE OF THE VAULT RIB ABOVE
THE NEW WORK TO BE CARRIED UP INDEPENDENTLY OF THE OLD WALL UNTIL IT HAS CONSOLIDATED UPON ITS FOUNDATION. TOOTHING ARE TO BE FORMED IN THE NEW WORK TO FACILITATE THE JUNCTION OF OLD & NEW WORK.
PORTLAND CEMENT CONCRETE RAFT WITH SUITABLE REINFORCEMENT.
CONCRETE BOX PIERS TO TIMBER CENTRES SUPPORTING ARCADE
PLAN OF ARCADE, BUTTRESSES & GRILLAGE FOUNDATION.
OUTLINE OF CONCRETE BASE LAID ENOUGH TO DISTRIBUTE TOTAL PRESSURE ON SOIL AT THE RATE OF ONE TON PER SQUARE FT
SECTION OF SOUTH WALL OF NAVE SUPPORTED BY PROPOSED BUTTRESSES.
SCALE ONE QUARTER INCH TO ONE FOOT
1919 TINTERN ABBEY OVERHANGING SOUTH WALL OF NAVE & PROPOSED BUTTRESSES.
H.M. OFFICE OF WORKS KING CHARLES ST. S.W.1

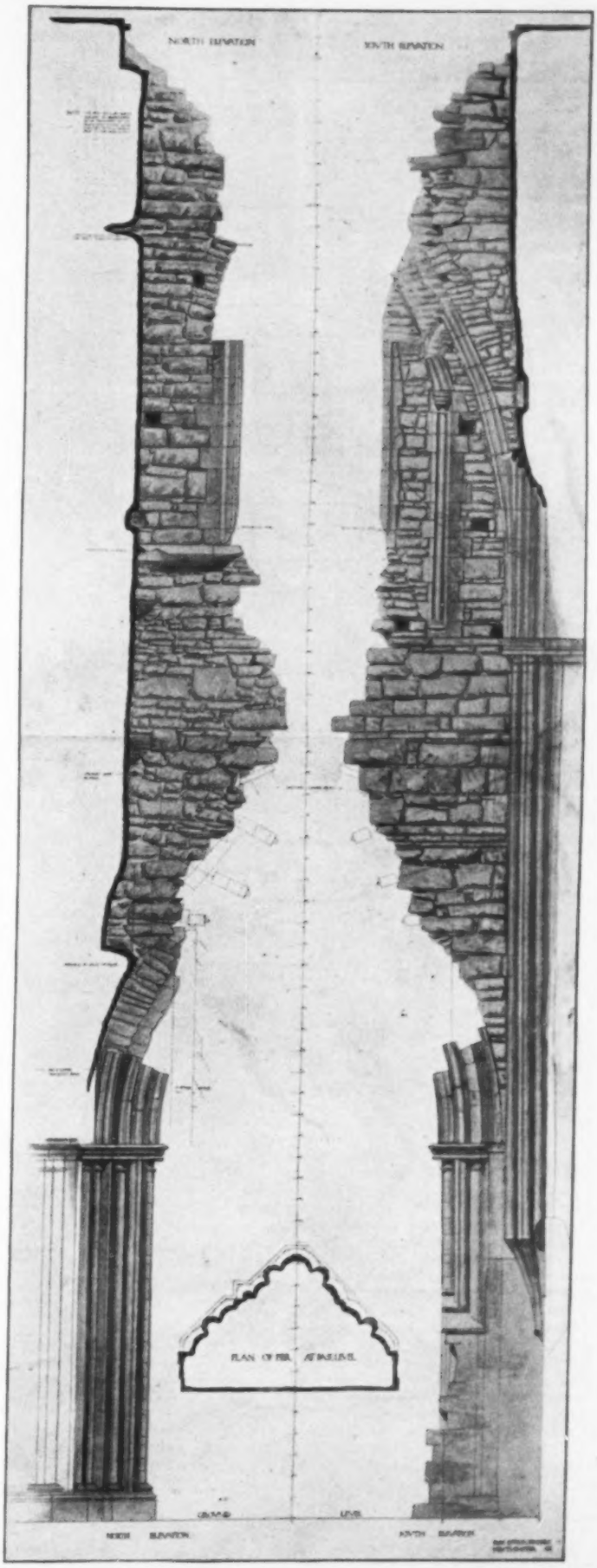
Suggested Method of Upholding South Arcade and High Wall of Nave by Buttresses—Abandoned in Favour of a Scheme of Reinforcement.

No other method has the advantage of interfering so little with the old work and leaving it apparently untouched.

Some purists have questioned this advantage in that "someone" in the future may be misled into thinking that the mediæval builders inserted Portland cement and constructional steelwork into their walls, but the point is hardly worthy of mention. Someone will make the priceless discovery, no doubt, but who would wish to rob him of his joy? Not every wall demands such extensive treatment. Where weights and heights are small the prospect of deterioration is limited to the damage due to weather and the growth of vegetation. Such minor portions can be left severely alone except for the eradication of roots and the formation of a waterproof top.

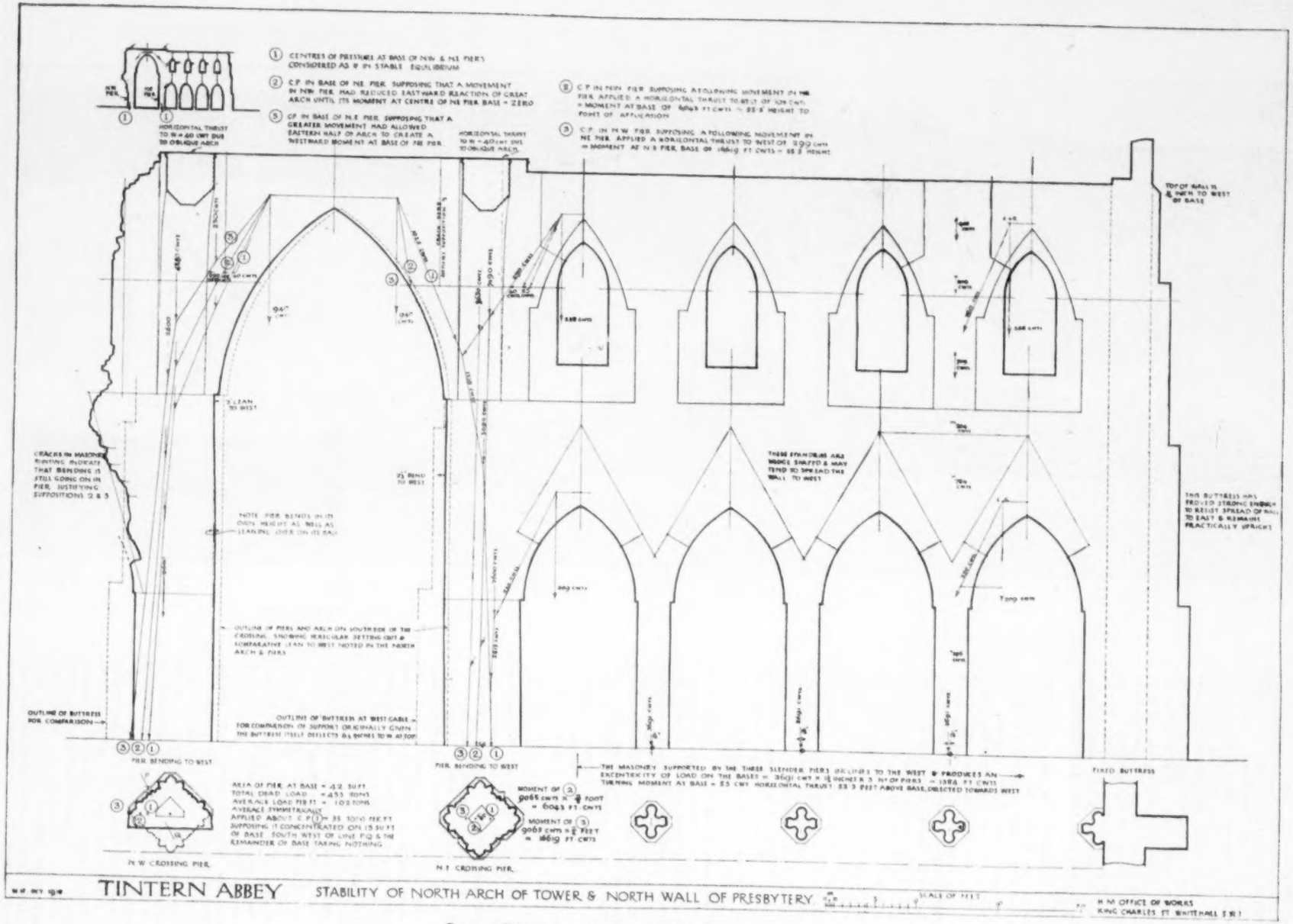
The method adopted is to rake away the decayed mortar, or, rather, the soil and dirt that has replaced it, until substantial work is reached, at whatever distance this may be. No good old mortar is affected by this process, but the cavities from which dirt, roots and birds' nests have been removed are filled up with cement mortar thoroughly rammed in solid, but kept back from the face of the work in order that a pointing of lime and sand may be applied to the joints. The new pointing is kept slightly back from the wall face so that the character of the mediæval masonry is preserved. Work treated in this way contrasts with and draws attention to any patches of old plastering or colour wash remaining upon the wall. The harmony of the pointing is established by using a mixture of coarse and fine sand similar to that used in Gothic times, and although the new work is generally rather better in quality than the best of the old, the appearance is wonderfully similar. The rain-washed character is obtained by the simple expedient of washing the pointing before it has completely hardened and thus exposing grains of sand on the face. On wall tops and horizontal surfaces likely to be affected by rain a more damp-resisting type of pointing is made with Portland cement instead of lime, but with the same rough surface. The only difference in effect is the slightly greyer colour of the cement pointing, but moss and lichen soon cover the surfaces to the confusion of the critics, who have been known to praise parts of the walls already treated by the despised Government department when they thought they were referring to untouched Gothic work.

It is sometimes objected that the repairs are too systematic and thorough, and that it would be advisable to undertake less at any given time and wait until further repairs became "really necessary" before putting them in hand. The objection is based upon a double misunderstanding; ignorance of the dangerous state in which these heavy masses of masonry have been brought by time and by purposeful destruction (at the time of the suppression of the monasteries and since), and by failure to grasp the responsibility weighing upon those actually placed in the position of custodians to precious relics of the past. Henry VIII's agents understood the anatomy of a Gothic building, and knew full well that by removing the roofs and a comparatively few stones from the bases of the buttresses they were dealing deadly blows to the structure. The unbalanced thrusts of the vaulting could be counted upon with absolute certainty, and the ruins of buildings subjected to this treatment which remain at the present day are not in any respect normally stable works. A systematic and thorough repair is urgently required if the destruction purposely put in train is to be checked. It is only by viewing each part of the ruins in connection with the whole group that any adequate and inconspicuous treatment can be devised. In the alternative case the public would have to be debarred access to the ruins, for it would be obviously unsafe to allow visitors to roam about under masses of unsupported masonry which awaited the custodian's decision as to whether repair was "really necessary" at any given time. Under the old patching system portions of the work were often thrown down on the plea that they would "soon fall of themselves," and a man, armed with a crowbar,



Tintern Abbey: Detail of Overhanging Masonry at N.W. Pier of Crossing.

THE RETENTION OF THIS FRAGMENT WAS A MINOR PART OF THE PROBLEM OF THE SUPPORT OF THE PIER AND GREAT ARCHES.


TINTERN ABBEY
STABILITY OF NORTH ARCH OF TOWER & NORTH WALL OF PRESBYTERY
SCALE OF FEET
H.M. OFFICE OF WORKS
KING CHARLES ST. WHITEHALL S.W.1
CENTRES OF PRESSURE AT BASE OF N.W. & N.E. PIERS CONSIDERED AS IF IN STABLE EQUILIBRIUM
C.P. IN BASE OF N.E. PIER, SUPPOSING THAT A MOVEMENT IN N.W. PIER HAD REDUCED EASTWARD REACTION OF GREAT ARCH UNTIL ITS MOMENT AT CENTRE OF N.E. PIER BASE = ZERO
C.P. IN BASE OF N.E. PIER, SUPPOSING THAT A GREATER MOVEMENT HAD ALLOWED EASTERN HALF OF ARCH TO CREATE A WESTWARD MOMENT AT BASE OF THE PIER
C.P. IN N.W. PIER SUPPOSING A FOLLOWING MOVEMENT IN N.E. PIER APPLIED A HORIZONTAL THRUST TO WEST OF 299 CWTS = MOMENT AT N.E. PIER BASE OF 1661g FT CWTS = 55.5 HEIGHT
HORIZONTAL THRUST TO W. = 60 CWT DUE TO OBLIQUE ARCH
HORIZONTAL THRUST TO W. = 401 CWT DUE TO OBLIQUE ARCH
TOP OF WALL IS 8 INCH. TO WEST OF BASE
CRACKS IN MASONRY POINTING INDICATE THAT BENDING IS STILL GOING ON IN PIER, JUSTIFYING SUPPOSITIONS 2 & 3
PIER BENDING TO WEST
NOTE PIER BENDS IN ITS OWN HEIGHT AS WELL AS LEANING OVER ON ITS BASE
OUTLINE OF PIERS AND ARCH ON SOUTH SIDE OF THE CROSSING, SHOWING IRREGULAR SETTING OUT & COMPARATIVE LEAN TO WEST NOTED IN THE NORTH ARCH & PIERS
OUTLINE OF BUTTRESS FOR COMPARISON
OUTLINE OF BUTTRESS AT WEST GABLE FOR COMPARISON OF SUPPORT ORIGINALLY GIVEN THE BUTTRESS ITSELF DEFLECTS 6.5 INCHES TO W. AT TOP
THESE STANCHIONS ARE MADE SHAFTED & MAY TEND TO SPREAD THE WALL TO WEST
THIS BUTTRESS HAS PROVED STRONG ENOUGH TO RESIST SPREAD OF WALL TO EAST & REMAINS PRACTICALLY UPRIGHT
THE MASONRY SUPPORTED BY THE THREE SLENDER PIERS INCLINES TO THE WEST & PRODUCES AN ECCENTRICITY OF LOAD ON THE BASES = 36(2) CWT × 18 INCHES & 3 INCH OF PIER3 = 1384 FT CWTS TURNING MOMENT AT BASE = 85 CWT HORIZONTAL THRUST 88.5 FEET ABOVE BASE, DIRECTED TOWARDS WEST
FIXED BUTTRESS
PIER BENDING TO WEST
AREA OF PIER AT BASE = 42 SQ FT
TOTAL DEAD LOAD = 455 TONS
AVERAGE LOAD PER FT = 10.2 TONS
AVERAGE SYMMETRICALLY APPLIED ABOUT C.P. (1) = 35 TONS PER FT SUPPOSING IT CONCENTRATED ON 15 SQ FT OF BASE SOUTH WEST OF LINE P.Q & THE REMAINDER OF BASE TAKING NOTHING
MOMENT OF (2) 9065 CWTS × 8 FOOT = 6043 FT CWTS
MOMENT OF (3) 9065 CWTS × 8 FEET = 1661g FT CWTS
N.W. CROSSING PIER
N.E. CROSSING PIER

Survey Diagram and Some Preliminary Calculations.

PREPARED FOR CONSIDERATION OF MEANS TO BE EMPLOYED IN UPHOLDING N.W. PIER AT CROSSING.

used to be sent up a ladder to prise away portions which seemed to threaten a fall. When more money was available the crowbar and the ladder were replaced by wholesale demolition and rebuilding, processes of restoration which are justly condemned by all archæologists, or by anyone who loves a building to be genuinely what it seems.

Another advantage of treating the work to a systematic repair is that it will permit of the withdrawal of scaffolds and other unsightly evidence of modern times and allow age to mellow the walls again with the colours supplied by minute vegetation growing on the exposed surfaces. Experience shows that large-rooted plants and trees must not be permitted to gain a footing, but the patina of lichens is sufficient to give a delightful tone. On the principle of patch and patch again, the surface of the walls would be intruded upon continually by scaffolding in some part or another, and no general effect of harmony could be expected.

The south arcade and high wall of the nave demands special care in that it leans over some eighteen inches from the vertical. Its preservation had been abandoned as hopeless, and demolition had been commenced before the Historic Buildings Branch took control. The work of pulling down was immediately stopped and the fragments of window tracery that had been taken down were replaced in position. Carefully designed timber shores were erected on concrete foundations to take the enormous horizontal component due to the eccentric loading of the piers until the problem of the wall's retention could be solved in a satisfactory manner. The wall is heaviest at the top, where it is 5 ft. 6 in. in thickness, and is supported upon very slender piers, each pier being loaded with 210 tons of masonry. The fact that the wall should lean inward towards the vaulting thrusts would seem somewhat mysterious were it not for the fact that the upper part was thickened excessively on the inner face and when the vaulting fell was left with an initial eccentricity which was augmented with every vibration and settlement of the ruins. Whether the original builders calculated on the eccentric load to help in the resistance of the vaulting thrust may never be known with certainty, but the only high wall of the building that is not placed eccentrically upon its piers—the east wall of the north transept—was also the only one provided with flying buttresses, an invention aiming at the same result. The preservation of the south nave arcade and high wall in its present position as an original Gothic structure is, therefore, of vital interest in connection with the evolution of the management of mediæval vault thrusts as well as for the study of architectural style.

Diagrams were prepared and the loads on the piers computed, which showed how nearly the crushing strength of the stone had been approached. The piers, in fact, are fractured in all directions under the excessive pressure on the north sides of their bases. On investigation their foundations proved to be sound, though here, again, the main mass of foundation has been placed where it would be useful to resist overturning by vaulting thrust, and is now (since the fall of the vaulting) eccentrically loaded in a way that tends to exaggerate the effect of the overhanging wall.

Many methods of safeguarding the wall have been considered and as a preliminary measure the upper parts of the wall were consolidated by means of a reinforced concrete chainage and by the grouting and pointing of individual joints between the stones. Reinforcement was avoided as long as possible, in this case, but the weights to be dealt with are so great that the adhesion due to good grouting could not be calculated upon to prevent shearing at the apices of the arches nearest the west gable, and at the junction with the central tower. Here again movements in the structure confirmed theoretical anticipation and demonstrated the need for the temporary timber shoring or of such other lateral support as might be devised to replace it.

Although the piers are small in cross section the stone is good and would be capable of bearing the average unit load of something like 26 tons to the foot were it not for the serious eccentricity of loading which subjects the south side of the pier to tension while loading the north face practically to breaking point. The actual effect of the forces which an engineer calculates under the heading of tension is shown in a masonry structure by the fractures which split the piers in a direction parallel to the length from top to bottom, allowing one half to stand idle while the remaining portion carries all the load. A scheme for buttressing the wall opposite two or three of the piers was rejected as much for the reason that buttresses could not relieve this concentration of pressure as because the buttresses themselves would be unsightly and intrusive modern works such as the Historic Buildings Branch avoids wherever possible.

A method of holding the wall back towards the south was next devised, and is being put into execution. This scheme brings into play the masses of wall, which already exist, at the west end of the building and in the south transept, instead of creating masses of new material in the shape of buttresses. The survey of structural movements had shown how weaknesses in one part of the building affected other distant parts, and that the great defect of the ruin was lack of tensile connection between part and part. The present system of anchoring back the leaning nave wall to the south aisle and to the west gable and south transept has the advantage of binding together into a stable group masses which, at present, tend to move apart and collapse separately. The great lattice girder that will perform this binding function will only add a trifling weight to the piers upon their idle or "tension" side, and it is designed to exert a pull upon the wall sufficient to relieve it of a great part of its damaging eccentric pressure and to take up the additional effects of wind blowing from the south. A light roof will be constructed above the lattice girder to protect it from the weather. This departure from the general principle of avoiding the introduction of any new works of restoration can scarcely be condemned since the difficulties of the case are such as to demand extraordinary measures.

The peril of the south arcade and high wall of the nave is made clearer by the fact that the companion wall on the north has already fallen to the ground, leaving ragged-edged masses corbelling out from the west gable and the north-west pier of the central tower. This pier is subjected to the pressure of the great arch crossing the north transept as well as to the pull of the overhanging masonry left by the fall of the north wall of the nave. An obliquity of original setting-out augmented by later movements adds to these damaging forces a component from the great west arch of the tower which crosses the nave and abuts upon the pier at an acute instead of a right angle. The pier, deprived of the support which it was designed to receive along the nave wall from the great buttress at the west end, had bent 3 in. out of the vertical at the springing some 40 ft. above ground. The development of a series of hair cracks showed that movement was still progressing and upon examination of the companion tower pier at the east wall of the north transept this was also found to be leaning bodily towards the west.

A modern buttress again seemed inevitable, when it was found that the solid wall at the top of the great tower arches had been only superficially repaired under an earlier regime, and contained rubble, dirt and roots behind a thin shell of cement-smeared ashlar. The pier was shored up temporarily, on its western side, and the defective interior of the wall top was replaced by a large anchor beam of reinforced concrete with bracket ends penetrating down into the haunches of the arch in such a way as to prevent its further spread. The continuation of the anchor beam was provided for as part of the repair of the north high wall of the Presbytery, at that time still untreated, but in urgent need of attention, and of the east wall of the north transept which had been violently bent to the west by the movements of the tower piers.

In the investigation of these movements the expansion of old walls subjected to a long course of disintegration was found to have affected the wall's length as well as breadth. Frost and swelling roots almost invariably widen the wall top by forcing the stones apart, and end by throwing them off the wall. The same action, augmented by the thrusts of window arches, takes place in a lengthwise direction, and in course of time may produce inclinations in the walls quite opposite to those which would have been anticipated from the thrusts of the original vaulting.

A wall containing arches on slender piers, which has been deprived of its buttress at one end, creeps towards that end, and movement is communicated to almost every part before the most dangerously exposed pier has been overturned. This lengthening of walls may be seen on the survey plan of Tintern Abbey, where the aisle walls have been subjected to torsion under the action of these forces. At re-entrant angles the wall tops overhang towards the inside, and at salient angles towards the outside of the building in response to the resultants of forces acting along the walls converging towards the corners. The aisle walls being comparatively low and strong, these slight movements called for no special treatment beyond the protection of the wall from moisture by the removal of vegetation, and by careful grouting and pointing.

It is not the method of the present custodians, notwithstanding recent criticism, to fill up the interior of every ancient wall with needless reinforcement. On the contrary, the Historic Monuments Branch allows itself to be guided by the physical condition of the ruin and combats the forces of decay by means which are only arrived at after the most careful consideration of all sides of the problem. Preconceived theories and stock solutions play no part in the final result.

[All the illustrations given with this article are kindly lent by H.M. Office of Works.]

Building By-Laws.

In view of the discussion now taking place with regard to building by-laws, and the points raised at the Bournemouth Congress of the Royal Sanitary Institute, a representative of *The Builder* has inquired at the Ministry of Health in regard to the suggestion put forward that the model by-laws for new streets and buildings should be revised at least every ten years. He was assured that this was fully accepted in the department, and that the urban model of 1877, the rural model of 1901, and the intermediate model of 1905 were from early days regularly overhauled to keep them up to date. In 1912, they were almost entirely recast in connection with the circular in August of that year, which urged local authorities to repeal obstructive by-laws. Since that time it has been the practice to review the model clauses every few months, in the light of any suggestions which have come to hand. The statement made at the same Congress that reinforced work, hollow walls, half-timber, and various other modes of construction, and also garden city streets, were prohibited by the model until the war, must, we were informed, have been based upon misunderstanding—probably due to reference to an old and long-superseded issue of the model by-laws; the amendments suggested had all been introduced at latest in the edition of 1912, while some, such as hollow walls and half timber walls, were provided for in much earlier issues. The Department, we were informed, is always ready to supply architects with copies of the model by-laws, which can also be bought through any bookseller, and it views with some apprehension statements that the models are not kept up to date, as it is anxious for local authorities who have obsolete by-laws still in force to appreciate the advantage of revising them on the lines of the present model clauses

BOOKS.

Water Supply—France. The Work of the R.E. in the European War, 1914-1919.

The enormous length of front held by the British armies in France included many different geological formations, from sandy dunes and polders on low-lying ground, overfull of surface water, to chalk plateaux elevated high above the water-bearing stratum. In general, the work of water supply could be classified into water-finding and water purifying, according to the nature of the site. In the course of active operations the problem of water distribution to the advancing troops had to be planned for in accordance with the necessities of each projected attack.

The report of the work of the Royal Engineers in water supply in Northern France deals in detail with these several matters, and is illustrated with many beautiful photographs and explanatory maps and diagrams showing variations of geological section, water bottle fillers, improvised water tanks of canvas, adaptation of lorries for water transport, many complicated pieces of pumping machinery, the apparatus for alum sedimentation and chlorination of water, besides many maps and plans marking the position of water supply bore-holes and installations. Barges were used in the work of water purifying and pumping, and many miles of pipe line were laid down between the point of supply and the draw-offs at the front. Besides the pipe line system water-carrying motors and water-carts were made use of in the scheme of distribution and a colossal amount of work was involved in providing water for large numbers of men, horses, and other animals concentrated in a narrow belt of territory.

The work was rendered particularly difficult and costly by the movement of the armies since a large advance raised the economic question of utilising plant from the old back areas and transporting it towards the new front. This was actually done before the German advance in the spring of 1918 and rendered a new installation necessary at points from which machinery had been removed but recently. As a set-off to this piece of bad luck, a great deal of the very efficient system which had been overrun by the enemy during March and April was recovered intact when they, in their turn, were forced to retire. "When the (British) advance took place, practically all the old water points were recovered, many of them intact, and many others requiring only minor repairs or new engines. The most important of the earliest to be recovered were those in the Mametz Valley and Caterpillar Valley. In one case the boilers were actually found under steam," a testimony to the haste—not the humanitarianism—of the Hun who had, in other cases, thoroughly dislocated the water supply before retreat, filling wells with corpses to poison the water and covering from sight other sources under rubbish and the debris of carefully planned explosions.

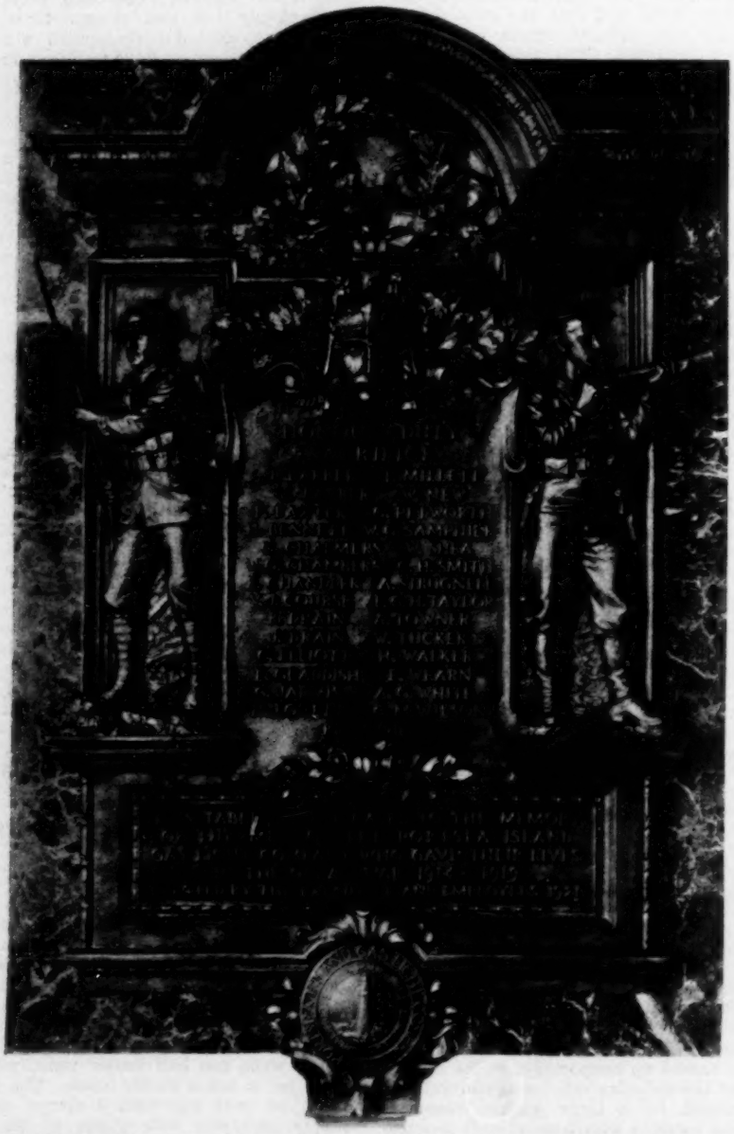
Some Factors in Thermal Sanitation in the Tropics. By GEORGE WALTER GRABHAM, M.A., F.G.S. (Cambridge: At the University Press.)

The experiments recorded in this reprint were carried out in tropical Africa by practical men who were attempting to find means of ameliorating the conditions which press so rigorously upon the white man in the torrid zone. In some instances they do not pretend to the minute exactness to which it is possible to attain in laboratory experiments conducted amid all the resources of civilisation, but there can be no question that the results obtained convey the practical information sought after and should prove of great benefit in the future to those white men whose work takes them into these dangerous regions. The author recounts the origin of his investigations in the following words:—"While travelling in Kordofan in 1913, I used a khaki shirt and found, in the sun, that it felt a great deal hotter than did the white ones to which I had been accustomed. No garments were worn either under or over the shirts, and their respective materials were clearly the principal factors to examine. At the village of Um Semeima, on February 22, the white and the khaki-coloured shirts were laid out on sandy ground in the full light of the midday sun; they were folded in the ordinary way and placed with pockets upwards so that a good many folds of cloth insulated the upper layers from the ground. Only one thermometer was available. Its bulb was placed for a period of a few minutes in the pocket first of one shirt and then in the other and showed—

"Under Khaki,	Under White,
55 deg. C.	50 deg. C."

This result showing the superior coolness of white is confirmed throughout the course of the experiments not only with textiles but with paints, whitewash being one of the best materials for keeping the heat from penetrating a building. The light colours have another advantage in "that noxious flies, such as the tse-tse, are not attracted by white clothing, consequently the wearer is less liable to attack. The mosquito seeks dark places to roost, and the more light that can be propagated by white or light colours, the less will be the attraction for these insects." It should be noted that a very small admixture of any other colour suffices to raise the temperature to a noticeable extent. The character of the substance also affects the question, since porosity, hardness, and conductivity are brought in play as well as the capacity for reflecting and refracting the rays of heat and light.

For those who wish to conserve heat in a cold climate, as fruit growers who train their trees against walls, a black surface is recommended since the wall will absorb heat during the day and give it off throughout the night; but it would be well to beware lest the black pigment employed should have a harmful chemical effect on the growing plants.



The Portsea Island Gas Company's Memorial. MR. VICTOR WILKINS, Architect.

[This memorial has been erected in the entrance porch of the chief offices of the Portsea Island Gas Co., Town Hall-square, Portsmouth. The memorial is of bronze mounted on a green marble background. Mr. Victor Wilkins, of 12, York-buildings, Adelphi, W.C.2, was the architect, and Mr. George Alexander the sculptor.]

Books Received.

THE HISTORY OF THE MANSION HOUSE. By Sydney Perks. (Cambridge: University Press). Price 35s. net.

THE VANDALISMS OF PEACE. By W. Randolph. (London: George Routledge & Sons, Ltd.) Price 1s. net.

THE A.B.C. OF INDIAN ART. By J. F. Blacker (London: Stanley Paul & Co.) Price 15s. net.

CATALOGUE OF THE JONES COLLECTION (Part 1, Furniture). By Oliver Brackett. (London: H.M. Stationery Office.)

ST. STEPHEN'S ROAD BRIDGE, BOURNEMOUTH

THIS bridge was designed to carry a 25-ton vehicle with 15 tons maximun axle load at 10 ft. centres. It is constructed throughout of reinforced concrete, and is of the beam type, with a central span of 26 ft. 6 in. and two side spans of 11 ft. 9 in., making a total span of 50 ft. The minimum head-room over the lower road is 15 ft. 6 in. The bridge carries a roadway 50 ft. wide (carriageway 24 ft. wide and two footways each 8 ft. wide); and two ducts for the conveyance of water, gas, electric, and other mains are also provided. The whole of the mouldings and exposed faces were cast from the shuttering and left untouched.

The design is a freely treated Grecian Doric style, a feature being two groups of four monolithic columns. On each flank of the bridge two inscription tablets have been erected. These are of red Peterhead granite, ornamented with bronze lions' heads and festoons.

The first test consisted of running two rollers abreast across the bridge, each roller weighing 13 tons. The maximum deflection occurred on beam No. 1 at the centre of the carriageway, and was recorded at .0182 in.

The second test was with three rollers. Two rollers were abreast as before, each weighing 13 tons, and another roller immediately following weighing 8½ tons, totalling in all 34½ tons. The maximum deflection on the same beam was recorded at .02 in.

The third test comprised three rollers as in test No. 2, travelling at high speed, *i.e.*, 5 miles per hour. The recorded deflection was .03 in.

In the fourth and final test two rollers travelled to the centre of the bridge. These were followed by a third roller, and all three were lined up abreast at the centre of the span. The total deflection in this case was recorded at .03 in., as in the third test.

At the completion of each test, and also at the completion of the whole of the tests, there was a complete recovery of the beam, the instrument returning to zero.

The beams referred to have a span of 26 ft. 6 in. and a total depth of 24 in., or a net depth of 20½ in. The ratio of depth to span is therefore 1/15.5.

When it is remembered that the bridge was designed to carry a rolling load of 25 tons, and the test load actually applied totalled to 34½ tons, the test may be considered a severe one.

The engineer for the bridge was Mr. F. P. Dolamore, F.S.I., Borough Engineer of Bournemouth. The contractors for the constructional work were Messrs. Grounds & Newton, of Bournemouth, and for the reinforcement the Indented Bar & Concrete Engineering Co., Ltd., of Westminster. The ornamental wrought-iron lamp standards were executed by Mr. J. Caslake, of Bournemouth, and the bronze work of the inscription tablets by Messrs. W. Morris & Co., Ltd., of London.

St. Stephen's-road Bridge, Bournemouth, during construction.

PATENTS.

*APPLICATIONS PUBLISHED.

158,246.—A. Watterich: Devices for locking and limiting the opening movement of doors.

178,541.—E. W. Currant: Domestic and like fire-places.

178,547.—A. F. Woodman: Construction of concrete walling.

178,550.—S. Smith: Mills for grinding paints.

178,555.—J. Michaels: Desks.

178,572.—J. H. Williams: Vessels for containing and spraying paints and varnishes.

178,586.—A. Helliwell: Kitchen ranges.

178,593.—C. Frech: Construction of arm-chairs and settees.

170,260.—K. Winkler: Process for treating mortar, cement and concrete.

178,599.—W. M. Ratcliff and W. Sambridge: Permutation or combination locks.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

St. Stephen's-road Bridge, Bournemouth.

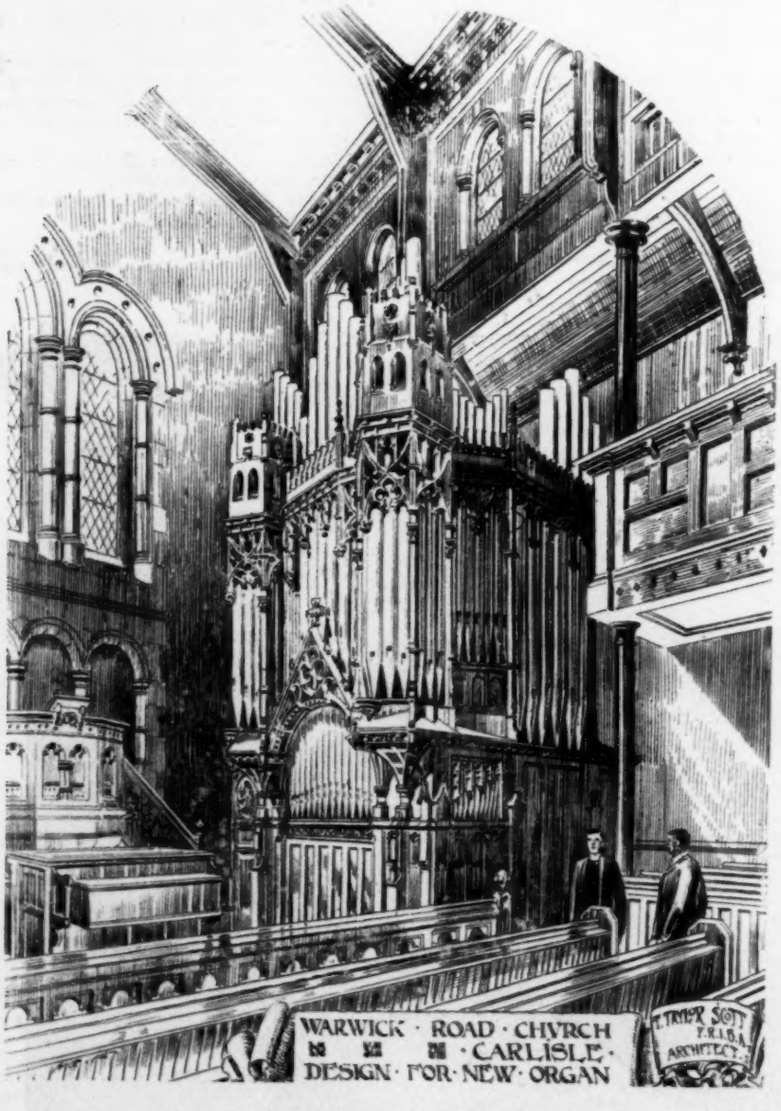
THE TOWN GARDEN.

BY GORDON HEMM.

THE town garden is a subject that is not very familiar to architects in general. This type of garden is a fundamental unit which contributes towards the formation of the comprehensive town plan. It is often understood that associated with town gardens are the public parks and recreation parks, the former often including games and recreation, and the latter frequently termed the children's playground. It must be realised what is meant by the title, "the town garden," in this respect. Such grandiose conceptions as the Zwinger Gardens (Dresden), Princes-street (Edinburgh), and the Garden of Stairs (Rome), immediately enter one's mind as the most consummate examples of the town garden. These super-grand performances certainly come under this category, but they do not serve to illustrate the exact meaning of the town garden. It will be found when surveying our cities and towns and their environs that numerous strips of land could be detached, owing to their character and variety of shape, and these would answer admirably for conversion into such gardens. These strips are distinct from areas, such as swamp land, river banks, land which is precipitous in form, and areas which include the effective grouping of trees, all of which should be acquired for the amenity and welfare of the community. The dominating shape of such strips is an acute triangle formed at the junction of two converging roads. The shape is, in many instances, so extremely acute that it becomes of no value for building upon; hence its adoption for this purpose, and if handled with restraint it should form a most valuable acquisition to the surrounding district. In some cases the strips vary in shape, sometimes assuming the form of squares, circles, ellipses, and oblongs. Frequently, small open spaces are found at the rear of lower-class buildings, often as not used as receptacles for all kinds of refuse, which could be converted into open greens interspersed with trees at small expense. Again, there are the town mansions of the Georgian period located in spacious grounds, and at one time the pride of the community; but, alas! now crumbling into decay almost beyond restoration. This land could be transformed into excellent formal layouts at little cost.

There is also the town plaza garden, which is rarely to be found in our larger northern manufacturing cities and towns. In the south many examples of this particular treatment are to be seen, some handled in a manner that has produced breadth and simplicity. These gardens must be laid out in a definite style of design, and, generally, the limitations of the land do not call for the informal arrangement which might be termed "Nature's method of handling"—a free, irregular manner of application. English people, as a whole, resent the formal version, but nevertheless it lends itself to the site of a town garden. Spaciousness, breadth, and simplicity must be the predominating features. Many existing examples suffer painfully from an over-elaboration of detail and undue affectation, which creates a sense of fussiness and disorder; it is only by due limitations of these that a satisfactory result can be secured. Scale plays an important function in securing the true expression of size. Numerous town gardens, admirably composed, have been completely spoilt in scale by the inclusion of some ungainly statue or monument. If such accessories are included in any type of garden they must be designed in keeping with the surroundings, in scale, character and disposition, and not executed as isolated units. The essential elements must be treated first; then the road to complete harmony is paved and the fundamentals accomplished. The strips of land should be laid out in an unpretentious, formal manner. Nothing is more restful than a simple sward of grass interspersed at intervals by an equal spacing of trees placed on each side of a paved walk of geometric pattern. Such open spaces, now waste land, might be converted into town gardens on a small scale. The transformation of these areas by this method would be a valuable asset to the community, not only from the hygienic standpoint but as an incentive to the inhabitants to seek better conditions of living. In congested districts every means should be made to acquire available land suitable for this purpose. Such an acquisition would create a refreshing contrast to the dreary surroundings of the thickly-populated zones, striking a note of colour amidst pervading drabness.

It is the duty of the authorities who administrate for the welfare of the people to take a progressive attitude and secure many of these waste strips both in developed and undeveloped areas, so that in the undeveloped land, when development occurs, some nucleus of a town garden system will have been established.



New Organ at Warwick Road Church, Carlisle.

MR. T. TAYLOR SCOTT, F.R.I.B.A., Architect.

[This organ was erected at a cost of £743 by Messrs. Alex. Young & Sons, Manchester, from drawings and designs prepared by Mr. T. Taylor Scott, F.R.I.B.A., of Carlisle.]

Sheffield, South Yorkshire and District Society of Architects and Surveyors.

The annual general meeting of this society was held on Thursday last week, when the following officers were elected: President, Mr. J. R. Wigfull, A.R.I.B.A.; Vice-President, Mr. H. L. Paterson, A.R.I.B.A.; Hon. Treasurer, Mr. R. W. Fowler, F.S.I.; Hon. Secretary, Mr. H. B. S. Gibbs, A.R.I.B.A., 15, St. James-row, Sheffield; Council: Messrs. W. G. Buck, Lic. R.I.B.A., F. E. P. Edwards, F.R.I.B.A., C. M. Hadfield, F.R.I.B.A., J. R. Hall, M.S.A., C. F. Innocent, A.R.I.B.A., J. M. Jenkinson, A.R.I.B.A., H. I. Potter, A.R.I.B.A., C. S. Sandford, F.S.I., and F. W. Wrench, Lic. R.I.B.A. The annual report was read and the statement of accounts presented, both being approved. The outgoing President (Mr. C. B. Flockton) was congratulated upon his election as a member of the Council of the Royal Institute of British Architects. Votes of thanks to the retiring officers concluded the business of the meeting.

Southwark Cathedral.

The history and architecture of Southwark Cathedral were the subject of a lecture by the Rev. T. P. Stevens on Saturday. Pointing out surviving features of Norman workmanship in the Cathedral, Mr. Stevens said there was a relic of an old building outside which he had an impression had never received proper attention from experts. He felt certain that it dated back beyond the Norman period. In the Harvard Chapel Mr. Stevens pointed to a recent feature of interest in the long history of the Cathedral. The chapel was added by Americans in memory of John Harvard, son of one of the wardens of the church, who laid in America the foundations of what ultimately became a world-famous university.

LAW REPORT.

Architect and Builder.

AN interesting case, which raised the point as to who should be liable for orders given by an architect for a building job—the architect or the builder—was heard on Friday last week, in the Bow County Court. The plaintiffs were the Steleonite Stamping Co., Ltd., who sued three Tonbridge (Kent) residents, Frederick G. Willard, 18, Waterloo-road, architect; F. J. Alwork, Stephen-street, outfitter; and B. Bing, of 47, Priory-street, builder, to recover £25 11s. 4d., for steel ceilings supplied.

In opening, counsel said that the architect defendant, gave orders for metal ceilings for work at Alwork's premises, never disclosing any liability but his own. Later he said that Alwork was the owner of the property, but meanwhile he gave a certificate in favour of the builder for £60, and the builder had actually paid £20 on account to the plaintiffs.

Mr. Max Hayward, managing director to the plaintiffs, said he was asked for an estimate for metal ceilings by the architect, and later heard that the price was accepted. Subsequently he received the order and was told to deliver to Bing, who actually sent his vans for the goods. That was in August, and in November the architect personally gave a further order for metal ceilings to be delivered to Bing, which was done. Long after this, he heard of Alwork, and that there had been a builder's estimate. They pressed Willard for the money, and then got a cheque for £20 from Bing, which they said they would accept if it was on account of the debt of Willard. Later they got a letter from Willard saying Bing was liable, to which they replied that Willard had ordered, and would be held responsible, but if he paid within a reasonable time no writ would be issued. In reply they got a certificate from Willard for the £25 11s. 4d., which was sent to Alwork, but his retort was that he had already paid Bing £60 for the work, on the certificate of Willard. It would thus be seen that each one was trying to put the liability on to the other, the whole trouble being that Alwork, for whom the work was done, had gone into bankruptcy. In cross-examination, the witness said it was true Willard's paper said he was an architect and surveyor, but as he did not disclose any principal, they concluded he was buying the materials in question for himself. The witness was asked about a letter of August 26, in which Willard was alleged to have written, "*Re* metal ceiling for Alwork. The contract for this alteration has been given to Bing, builder, and when he has finished I will issue a certificate, and he will pay," but he denied having received it, although it was possible the manager had. The witness was then asked if he had applied to Willard for a certificate, and he said it was all mixed up, and the real thing was that they wanted to get a cheque. Witness considered that the man who ordered the goods should pay for them if he did not disclose a principal.

By Mr. Hillman: The only transaction they had had with Bing was the cheque for £20.

Mr. Willard said he was employed by Alwork for the carrying out of alterations. Metal ceilings were wanted, he asked for estimates, the plaintiffs' was the lowest, and the order was placed with them; but he was sure he told them Bing was the building contractor. On November 20, he called on the plaintiff to order some metal ceiling for some additional work, which came to £6 12s. 9d., and told them to send it to Alwork. They then told him that they had had a cheque for £20 from Bing, and asked if he was all right, and he told them yes. The only way he brought the liability to the plaintiffs was by saying "*Re* work at Alwork's," which, as this was a sub-contract, was the correct way to do it. He concluded that the builder was liable, and that no architect would have ordered different from the way he did.

Henry Bing, builder, said that the original contract of his was carried out before Willard ordered the steel plates. By certificates from Willard he had received £531 16s. from Alwork, but had done work for £713 13s. 9d. He had proved in Alwork's bankruptcy for £181. He had charged £25 10s. 9d. for the fixing of the steel ceilings, and had not asked for payment for the steel.

In cross-examination, his own account was put before him in which it said, "To supplying ceiling," and witness said that how it got there was a mystery. The first order to the plaintiffs was for £21 10s., and he was asked by Willard to pay £20 on account for him, when he got a certificate for £60, which he did, and the balance, 30s., had been paid into court. Willard himself ordered the balance of the metal ceilings. It was usual for the builder to order everything and the architect to condemn it if he wished, not for the architect to order it.

Judge Snagge gave a verdict against Bing, the builder, for all but the last lot ordered, £6 12s. 9d. and costs.

Insured Workers in the Building Trades.

In the House of Commons last week, Dr. Macnamara informed Mr. T. Thomson that the following table showed by occupation the number of insured persons in the building trades of Great Britain:—

	Estimated number of insured persons.
Bricklayers	62,230
Carpenters and Joiners ..	133,090
Masons	23,720
Slaters	5,430
Plasterers	17,270
Painters	115,780
Plumbers	35,870
All other occupations (mainly labourers)	366,970
Total	760,360

Encouraging Building.

Writing to *The Times*, Mr. E. W. Buckley, of Huddersfield, says:—"One of the best methods for encouraging building is for local governing bodies to remit municipal or other improvement rates for a period of, say, ten years, for all such local governing bodies would be the immediate gainers. One hundred houses built to yield £10 a year each in rates would be a loss of £1,000 a year; but in this borough of Huddersfield one hundred such houses would return the corporation about £5 a year in ground-rent, whilst one hundred new households would contribute £20 a year to the municipal revenue in rates, gas, water, and electric light, and that without adding anything appreciably to the cost of those departments."

From the New York *Tribune*.

Proposed Hudson River Bridge.—MR. GUSTAVE LINDENTHAL, Architect.

[It is expected that the construction of this bridge will shortly be commenced. The total length would be 6,000 ft., with a central span of 3,240 ft. The subway would carry twelve lines of railway tracks. The buildings over the anchorage piers would be used as offices. The towers would be taller than the Woolworth Building. The cost of the structure is estimated at 100,000,000 dollars.]

THE BUILDING TRADE.

LANDLORD'S LIABILITY FOR DEFECTIVE PREMISES.

A RECENT decision of the Court of Appeal in the case, Bromley *v.* Mercer (1922, 2 K.B. 126), again draws attention to a point upon which the law seems unsatisfactory. The facts of the case are simple. The defendants were brewers and owners of an inn or hotel, and of the yard behind the hotel bounded by a wall which adjoined a highway. These premises were let to a tenant, one Saxon, by the brewers as landlords, and under the tenancy agreement the landlords were liable to keep the outside of the premises in good repair and condition. The wall at the back of the premises was to the knowledge of the defendants in rather an insecure or dangerous condition at the time the premises were let to Saxon, and had been allowed to remain in that condition in breach of the agreement contained in the contract of letting. The wall was constructed of flagstones set upright in the ground and connected with iron stays, but these stays had become rotten and useless, and some of the flagstones were cracked and insecure, and were not cemented or otherwise held together.

The plaintiff in the action was a child, the grandchild of Mrs. Saxon, the wife of the tenant, who had been on a visit to her grandmother, and whilst playing with other children in the yard, had sustained very serious injury. She had placed her hand on one of the flagstones and it had fallen upon her.

The case was tried at Assizes by a Commissioner, who found that the wall was a public nuisance abutting on a highway, and although the plaintiff was not on the highway but in the yard, he gave judgment for her.

The Court of Appeal has had to set this judgment aside. In the first place, it must be noted that although the Commissioner had not found whether the defendants were, or were not, negligent in not examining the wall, the case was treated in the Court of Appeal as though there had been a finding of negligence, but the Court were unable to support the finding that the liability for nuisance could be extended to a person not using the highway, but to an invitee on private premises, as the plaintiff in this case was. So far as this point is concerned there is nothing unsatisfactory in the case, but the defect in the law lies below the surface, as we shall now endeavour to show. The hardship of the case no doubt caused the Commissioner to strain the law by holding that the plaintiff could recover as a member of the public for nuisance because there was no other method of giving relief, for, as Lord Justice Scrutton said, the Commissioner had rightly held that the plaintiff could not sue the defendants for negligence either in contract or in tort because they were not in occupation of the premises and owed no duty to anyone coming on the premises. That in itself is a reasonable proposition, but it requires limitation for it leads to the extreme result shown in the case of Cavalier *v.* Pope (1906, A.C. 428) on which we commented at the time (*The Builder*, July 7, 1906), where unfurnished premises which the landlord had undertaken to put into repair were in a bad state of repair, and the wife of the tenant sustained personal injury. Although both husband and wife joined in the action the wife was held disentitled to recover damages as she was not party to the contract, a case which was followed even under the provisions of the Housing Acts in Ryall *v.* Kidwell & Son (see *The Builder*, May 23, 1913), where a tenant was suing under similar circumstances for injuries sustained by his infant daughter.

Where a tenant takes a house under a lease by which the landlord undertakes to keep the premises in repair, and the landlord is informed of a serious defect which may be a source of danger, it would seem reasonable that liability for injuries arising from the landlord's neglect to repair should at least extend under the contract of tenancy to members of the tenant's own family resident with him on the premises, but remedy in tort is not available because the landlord is not in occupation and the remedy on the contract of tenancy is only available to the tenant himself.

This being the law of very long standing it is hardly likely that any satisfactory alteration will be made in it, but it is important that tenants should realise their position, for if there is a dangerous defect in the premises they may be liable to persons coming on the premises as invitees or licensees, and if the landlord fails to make good a dangerous defect, for his own protection the tenant, after a reasonable time from giving notice to the landlord of the defect, should make it good and sue the landlord for the cost.

PATENT LAW.

WE may draw attention to a recent decision of importance to patentees *In re* Summers Brown's Patent (*Weekly Notes*, July 22). In 1906, letters patent had been granted to Summers Brown, who, in 1909, had granted the sole licence to manufacture, use and exercise the invention of Roneo, Ltd., and Roneo, Ltd., had continued to be the sole licensees until 1920, when, by a deed dated June 29, 1920, and duly registered, the letters patent were assigned to Roneo, Ltd., absolutely, in consideration of a sum of £3,200. That deed contained a provision that the patentee would grant to the company the benefit of any extended period, and the company were to pay the patentee the sum of £500 for each year the patent was extended.

The present proceedings were an originating summons taken out by the original patentee and the company under section 18 of the Patent and Designs Act, 1907, as amended by section 7 subsection (3) of the Patents and Designs Act, 1919, asking for an extension of the term of the patent. Section 7 subsection (3) of the Patent Act of 1919 provides that section 18 of the Act of 1907, which governs extensions, shall have the following subsection added to it: "Where, by reason of hostilities between His Majesty and any foreign State, the patentee, as such, has suffered loss or damage . . . an application under this section may be made by originating summons instead of by petition, and the Court, in considering its decision, may have regard solely to the loss or damage so suffered by the patentee. . . ."

In the proceedings a preliminary objection was raised by the Comptroller that the applicants were not entitled to apply under this added subsection for an extension because no part of the war loss had been suffered by the existing patentees under the assignment, and the original patentee had, by virtue of that assignment, ceased to be a patentee. The Court held that this contention would involve construing the word "patentee" as the patentee at the time the application was made —a construction which would involve reading the new subsection as an independent enactment instead of a qualification of, and proviso to, section 18 of the Act of 1907. In subsection (5) of that section, which enacts "if it appears to the Court that the patentee has been inadequately remunerated by his patent," the word "patentee" had always been construed as meaning the successive patentees throughout the existence of the patent. The Court held that the construction of the subsection contended for would also be opposed to the view expressed *in re* Brown's Patent (see *The Builder*, May 28, 1920), and that upon this application by the patentee and his assigns together for an extension, the loss suffered by the original patentee during the war must be taken into consideration notwithstanding the assignment, but the loss suffered by the assignees as manufacturers could not be taken into account.

THE HOUSING ACTS.

IN our issue of July 21 we referred to two cases under the Housing Acts, and now a third case, Arlidge *v.* Tottenham Urban District Council, is reported (*Weekly Notes*, July 8). The appellant, Arlidge, was summoned for neglecting to pay to the respondents the sum of £12 15s., being the sum expended by them in executing work on a house of his under section 28 of the Housing Act, 1919. The house had a rateable value of £13, and the rates amounted to 21s. 6d. in the pound; the house at all material times was let on a weekly tenancy at 16s., inclusive of rates. The respondents on February 9, 1921, served the appellant with a notice under section 28 of the Housing Act, 1919, requiring him to execute certain work as being necessary to make the house fit for human habitation. The appellant had not done the work, and the respondents, having invited tenders from contractors, had had the work done according to the cost of the lowest tender, the amount now being sought to be recovered.

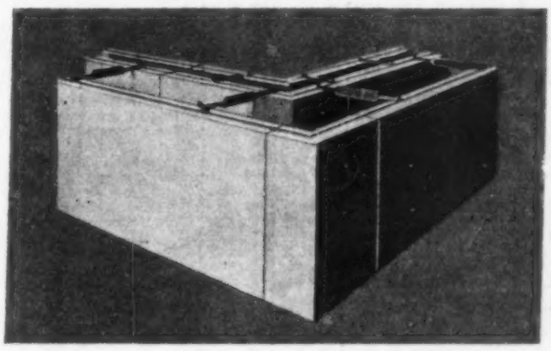
The case is at present very briefly reported, but one of the contentions of the appellant appears to have been that section 28 only applied to houses the rent of which, outside the administrative county of London, did not exceed £26 per annum, the limit contained in section 14 of the Housing Act, 1909, but the Divisional Court held that the expression, "Any house suitable for occupation by persons of the working classes," contained in section 28 of the Act of 1919 must be construed in its natural and ordinary meaning, and the Court could not import into the section the limitations as to rent contained in sections 14 and 15 of the Act of 1909; those sections, though expressly referred to in the Act of 1919, related solely to the condition to be applied in a contract of letting.

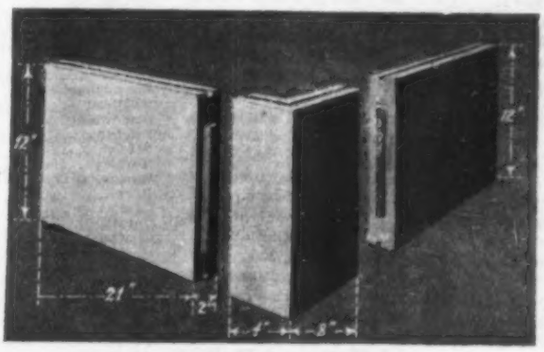
The decision raises some questions of difficulty which we cannot thoroughly deal with until an extended report appears. As was decided in *Ex parte* Rush (see *The Builder*, July 21), there is a more extended right of appeal under sections 14 and 15 of the Act of 1909 than is conferred by section 28 of the Act of 1919, but it was also decided in that case that sections 14 and 15 are incorporated in the Act of 1919. So far as we understand it, the appellants in the case we are considering argued that section 28 of the Act of 1919 was to be read as limited by sections 14 and 15 of the Act of 1909, and the Court has now held that that is not the case, as jurisdiction by section 28 is given beyond the limits conferred by sections 14 and 15 of the Act of 1909. But it does not follow from this that within the limits prescribed by sections 14 and 15 of the Act of 1909, and in the circumstances defined by those sections—*i.e.*, where there is a contract of letting—that a local authority can elect to proceed under section 28 of the Act of 1919 instead of under the Act of 1909. That would manifestly deprive the owner of the more extended right of appeal. Therefore, we read this decision only as laying down that section 28 is not limited by sections 14 and 15 of the former Act, and that it applies to cases where the rental exceeds the limits prescribed in those sections, also probably to cases where there is no letting of the house to bring it within those sections, but not as deciding that it overrides those sections, as that would be contrary to the general construction placed upon the Acts in *Ex parte* Rush. We shall revert to this case when it is reported in full.

NEW INVENTION.

NEW METHOD OF CONCRETE CONSTRUCTION.

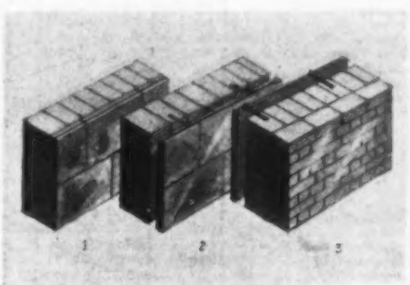
WE recently had an opportunity of seeing a demonstration of a form of concrete building embodying features which appear to have possibilities not only of reducing the cost of building, but also of making the concrete house attractive without any appreciable extra cost. The chief idea of this system (the "Tileform") is to eliminate the cost of shuttering by making the formwork an integral part of the building where solid walls are required, and to provide an easily made and easily handled slab for the erection of cavity walls in which in no place does the concrete extend right through the walls; in the latter case, the tiles, which are strong enough to support floor joists without filling, are held apart to the required distance by metal ties.





The uses of the tiles are clearly shown in the accompanying illustrations. They are readily adapted to any form of construction, and may be made to any size. The ordinary measurements, however, have a minimum thickness of 2 in., a height of 12 in., and a length of 21 in. At corners angle-tiles are used which have one face twice as long as the other, so as to break joint when superimposed over one another. The tiles are made on a simple hand-operated mould composed of metal plates, with the end pieces so designed that tongues and grooves are formed to strengthen the joint; and by the insertion of moulded pieces of wood or metal any desired shape may be obtained if ornamentation or architectural features be required.

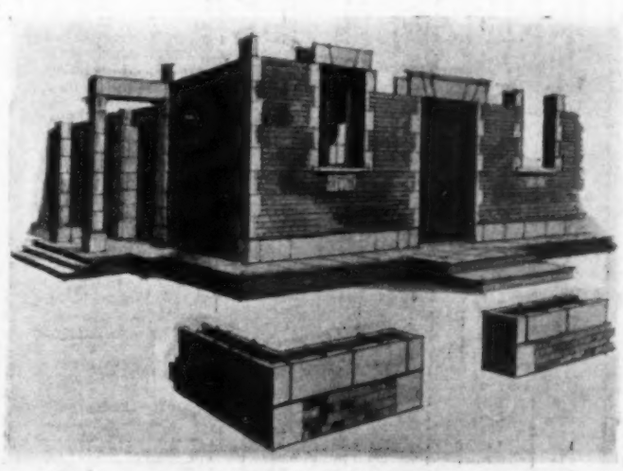
At a time, however, when the æsthetic side of the use of concrete for building purposes is so much under discussion the tiles used in this system have much of interest. They are composed of Portland cement and sand, without the addition of stone, gravel, or other aggregate, and are very dense and impermeable. The mixture is consolidated in the moulds by vertical rodding, which forces fine particles of semi-dry mixture into every crevice of the mould. Immediately after they leave the moulds the seasoning of the tiles commences, by the application of water from sprinklers; and later they are stacked closely

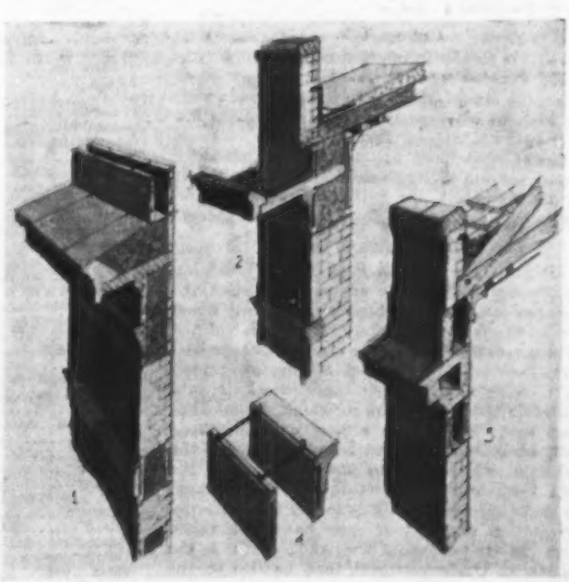


together, and frequently soaked until they are thoroughly cured. The result is an excellent surface, comparable with stone, and with the addition of colouring matter or solutions a very complete range of shades is produced.

For internal decoration, also, concrete tiles with a smooth surface and an attractive colour have considerable possibilities in the direction of cheapening the cost of building, for, providing a cavity be left in order to prevent the danger of condensation, there seems no reason why such a concrete surface should not take the place of lath and plaster. Samples of "Tileforms" in various colours have a very close resemblance to a distempered wall, with the additional advantage that the colour is an integral part of the wall, and does not require frequent renewal as does distemper. The surface of these concrete tiles also takes paint and enamel well. Where the tiles are thus used in interiors they may be shaped to take the place of mouldings around doorways, skirtings, window frames, etc., thereby eliminating much of the woodwork and adding to the fire-resisting properties of a building. Partition walls in this system are built up of single tiles 2 in. in thickness, or where sound-proof walls are required double walls may be used with a cavity between.

The system is not confined to the erection of plain walling and decorative features, however, for attention has also been given to the construction of piers and columns, both round and square, by the use of these tiles; for solid piers, the tiles are moulded to the required shape and size, and after being placed in position one above the other the core is filled in with concrete, reinforced if necessary. Further particulars regarding this system may be obtained from Messrs. Tileform, 11, Hanover-square, London, W.1.





"Tileform" Construction.

NEW BUILDINGS IN LONDON.

WEST CENTRAL.—In connection with the block of new offices for the Liverpool Victoria Insurance Co., in course of erection between Southampton-row and Bloomsbury-square, Messrs. C. Isler & Co., Ltd., Bear-lane, Southwark-street, S.E.1, will sink the artesian wells.

WHITECHAPEL.—The premises occupying Nos. 27–28, High-street have been demolished, and a new building is now in course of erection on the site, having a frontage of 34 ft. and a depth of about 100 ft. It is to be fitted as a new eastern branch for Messrs. Lloyds Bank, Ltd. Steel and reinforced concrete construction is being used, and the ground floor front will be of granite and Portland stone, with Dutch bricks and tiles above, and a flat asphalte roof. There will be three floors and a strong-room of blue Staffs. brick and reinforced concrete. The architect is Mr. T. M. Wilson, F.R.I.B.A., of 4, Staple Inn, W.C.1. The general contract has been secured by Messrs. Walter Lawrence & Son, Ltd., of 19, Finsbury-square, E.C.2. The steelwork is being supplied by Messrs. Aston Construction Co., Ltd., of Eagle Wharf-road, Hoxton, N.1.

SOUTH-EAST.—Preliminary excavations and the laying of foundations are in progress on a site in Commercial-road, preparatory to the erection of a new building for the Union Cold Storage Co., Ltd., whose general offices are at 13, West Smithfield, E.C.1. The new storage building, with a front of 140 ft. and a depth of about 66 ft., will have steel and reinforced concrete floors, columns, stanchions, &c., and the external walls will be composed of London stock bricks. The plans have been prepared in the architect's department of the Company. The general contract has been secured by Messrs. J. Gerrard & Son (1920), Ltd., of Manchester. The building will have seven stories reaching to a height of 90 ft. from the ground, with loading platforms on each floor. The sub-contract for asphalting has been secured by Messrs. The Val de Travers Asphalte Paving Co., Ltd., of 155, Bishopsgate, E.C.2. The steelwork will be supplied by Messrs. Dorman, Long & Co., Ltd., of 4, Central Buildings, S.W.1.

Builders' Estates.

Mr. John Copplestone Palmer, of High-street, Budleigh Salterton, Devon, builder, left estate value £27,117.

Mr. George Small (83), of Malwood-road, Balham-hill, retired builder, left estate value £7,307.

Mr. Henry Thomas Goodall, of Downton Villa, Worthing, retired builder and contractor, left estate value £7,451.

Income Tax.

We have received from Messrs. Oliver & Boyd, of 33, Paternoster-row, London, a copy of a folder, the aim of which is to present the income tax and super-tax in an intelligible and, as far as possible, tabular form. All the various heads of abatement are tabulated with their conditions and money value, and in this, as in all other respects, the particulars cover all the points up to date, including this year's Budget.

St. James's Park Lake.

Although St. James's Park is fast assuming its pre-war beauty, the greater portion of the lake has not yet been filled with water. When the lake was flooded after the removal of the huts some weeks ago, the water disappeared through cracks in the bed of cement, principally owing to the porous condition of the subsoil after the many years in which the lake has been dry. Since then a new dam has been built across the lake, and between that and the old dam, which enclosed the sanctuary of the wild fowl, water was let in a few days ago. As there has been but little loss of this water by percolation, nearly four acres have been taken from the dry portion of the lake; and it is the success of this experiment that has led to the hope that in a short time it may be possible to flood the bed right up to the Buckingham Palace end of the park.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons	Bricklayers.	Carpenters, Joiners.	Plasterers	Slaters.	Plumbers.	Painters.	Masons'	Bricklayers' Labourers.	Plasterers
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bath	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Bedford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/6½		1/0½	
Birkenhead	1/10	1/10	1/10	1/10	1/10	1/10	1/10		1/5½	
Birmingham	1/8	1/8	1/8	1/8	1/8	1/9	1/8		1/3	
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bournemouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Bridgwater	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½		0/11½	
Brighton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Chatham	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Cheltenham	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Colchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Eastbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½		1/0½	
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Gloucester	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Grays	1/8	1/8	1/8	1/8	1/8	1/8½	1/7		1/3	
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Great Yarmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Guildford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Ipswich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Liverpool	1/10	1/10	1/10	1/10	1/10	1/10	1/10		1/5½	
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
London	1/8	1/8	1/8	1/8	1/8	1/8½	1/7		1/3	
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Luton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Maidstone	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Norwich	1/4½	1/4	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5		1/0½	
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Plymouth	1/6	1/6	1/6	1/6	1/6	1/6	1/5		1/1½	
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Portsmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Rochester	1/4	1/4	1/4	1/4	1/4	1/4	1/4		1/0	
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
St. Helen's	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/9	1/0		1/3	
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4		1/0½	
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Swindon	1/5	1/5	1/5	1/5	1/5	1/5	1/4		1/0½	
Taunton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Torquay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Tunbridge Wells	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Windsor	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½		1/0½	
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8		1/3	
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	
York	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½		1/2	

(For rates of wages in the Building Trade in Scotland, see page 253.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

AUGUST 18.—**Birkenhead.**—HOUSES.—Erection of 54 "A" type houses, for the T.C. Mr. T. T. Rees, Housing Architect to the Corporation, 64, Rodney-street, Liverpool. Deposit £2 2s.

AUGUST 18.—**Dover.**—HUT.—Erection of a cable hut at Dover, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 18.—**Kidwelly.**—Extension of Sardis Congregational Chapel, Trimsaran, Kidwelly. Messrs. George & Price, P.A.S.I., M.S.A., &c., Cross Hands.

AUGUST 18.—**Nottingham.**—BATHS.—Erection of cottage baths, Hawthorn-street, for the T.C. City Architect, Guildhall, Nottingham. Deposit £1.

AUGUST 19.—**Chesterfield.**—LODGE.—Erection of a lodge at the Walton Sanatorium, Chesterfield. Mr. G. C. Copestick, New County Offices, Derby. Deposit £1 1s.

AUGUST 19.—**Crewe.**—MEMORIAL.—For the erection complete of a suitable war memorial in the Market-square; the cost of the memorial is not to exceed £1,600, exclusive of foundations. Mr. L. St. G. Wilkinson, M.C., Municipal Buildings, Crewe.

AUGUST 19.—**Islington.**—REPAIRS, &C.—For repairs and painting, &c., to the operating theatre and to two other rooms at the Infirmary, Highgate-hill, N., for the Board of Guardians. Mr. Edmund J. Harrison, Lic.R.I.B.A., 23, Berkeley-road, Crouch End, N.8. Deposit £2.

AUGUST 19.—**Manchester.**—WAREHOUSE.—Erection of a large warehouse on land in Trafford Park, for Messrs. Richard Johnson, Clapham & Morris, Ltd. Mr. Arthur Clayton, M.S.A., Duchy Chambers, Clarence-street, Manchester. Deposit £1 1s.

AUGUST 19.—**Wokingham.**—OFFICES.—Erection of two additional offices to the Board Room Buildings, for the Board of Guardians. Mr. P. H. Phipps, Clerk, Union Offices, Board Room, Barkham-road, Wokingham. Deposit £1 1s.

AUGUST 21.—**Brixham.**—GRAND STAND.—For erection of a Grand Stand at Great New Park, for Brixham Rugby Football Club. Mr. S. J. Couch, Hon. Sec., Burton-street, Brixham.

AUGUST 21.—**Dewsbury.**—FENCING.—Providing and fixing fences and gates on the Housing Sites, for the T.C. Mr. H. Dearden, Borough Surveyor, Town Hall, Dewsbury.

AUGUST 21.—**Greenock.**—HOUSES.—Erection of 84, or alternatively 36, tenement houses, for the T.C. Office of Public Works, Municipal Buildings, Greenock. Deposit, £1 1s.

AUGUST 21.—**Lanchester.**—OUTBUILDINGS, &C.—Providing 13 sets of sanitary outbuildings and coal-houses, yard fencing, and concreting and roadmaking drainage, &c., at Lanchester, near Durham. Mr. John T. Pegge, Surveyor, The Anchorage, Durham City. Charge 10s.

AUGUST 21.—**Shoeburyness.**—PAINTING.—Painting two gas holders and water tank, for the U.D.C. Mr. A. W. Goodchild, The Waterworks, Shoeburyness.

AUGUST 21.—**Stockport.**—DEMOLITION.—For the pulling down and sale of materials of the Old Grammar School, Stockport, to clear the site for the proposed war memorial. Messrs. Halliday, Paterson, and Agate, architects, 14, John Dalton-street, Manchester.

AUGUST 21.—**Sunderland.**—ALTERATIONS TO SCHOOL.—Alterations to the Moor Council School. Education Offices, 15, John-street, Sunderland. Deposit £2 2s.

AUGUST 21.—**Tiverton.**—HOUSES.—Erection of five houses, in King-street, Tiverton, for Messrs. J. Heathcoat & Co. Knightshayes Estate Office, Tiverton.

AUGUST 22.—**Glasgow.**—HOUSES.—Erection of 102 tenement houses at Polmadie, for the T.C. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow.

AUGUST 22.—**Mardy (Glam.).**—REPAIRS.—For repairs to 100 houses at Mardy (Rhondda Valley), Glam., for the Trethomas No. 2 Building Club. Mr. J. J. Jenkins, M.S.A., architect and surveyor, Porth, Rhondda.

AUGUST 22.—**Redcar.**—HOUSES.—Erection of six houses, for the U.D.C. Mr. G. T. Wellburn, A.R.I.B.A., 53, High-street, Redcar.

AUGUST 22.—**Trethomas.**—REPAIRS.—Repairs to 100 houses at Trethomad, Bedwad, Mon, for the Trethomas No. 2 Building Club. Mr. James T. Jenkins, M.S.A., Architect and Surveyor, Porth, Glam.

AUGUST 23.—**Aberearn.**—HOUSES.—For erection of 20 houses on Llanfach site, for U.D.C., on basis of materials' prices purchased in open market. Work to include drains, paths, fencing, and all outside work. Mr. Percy B. Houfton, Furnival Chambers, Chesterfield. Deposit £1 1s.

AUGUST 23.—**Carnarvon.**—HOUSES.—Construction of six houses at Cae Hampton, Bethel-road, Carnarvon, according to Class B of the plans of the Ministry of Health, for the B.C. Mr. Robert O. Roberts, Town Clerk, 12, Market-street, Carnarvon.

AUGUST 23.—**Chesterfield.**—HOUSES.—Erection of 25 houses at Staveley, 25 houses at Heath, and 12 houses at Morton, for the Chesterfield R.D.C. Mr. B. F. Hartwright, Clerk, Union Offices, Chesterfield. Deposit £2 2s.

AUGUST 23.—**Greasborough.**—HOUSES.—For eight type "A" houses in three blocks, for the U.D.C. Mr. James Totty, Architect, Moorgate-street, Rotherham.

AUGUST 23.—**London.**—PAINTING, &C.—For internal painting and cleansing at (1) Patent Office, (2) Public Trustee Office, (3) General P.O. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s. each.

*AUGUST 23.—**London, S.W.**—SCHOOL.—Erection of a School Building to accommodate about 300 children in the grounds of the Metropolitan and City Police Orphanage at Strawberry. Mr. H. J. S. Abrams, Architect, 19, Buckingham-street, Strand, W.C. 2. Deposit £5 5s.

AUGUST 23.—**Minehead.**—COTTAGES.—Erecting about 20 cottages at Alcombe, Minehead. Mr. Wm. J. Tamlyn, Architect, Northfield-road, Minehead.

*AUGUST 23.—**Newport, Mon.**—HOUSES.—Erection of 20 houses on the Llanfach Site, Abercarn, Mon., in accordance with conditions stipulated. Mr. Percy B. Houfton, Council's Architect, Furnival Chambers, Chesterfield. Deposit 1 guinea.

AUGUST 24.—**Islington.**—REPAIRS AND PAINTING.—(*a*) Repairs and painting, &c., to the Medical Superintendent's residence at their Infirmary, Highgate Hill, N.; (*b*) for repairs and painting, &c., to the Male Infirm Ward Block at their Institution, St. John's-road, Upper Holloway, N., for the Guardians of the Poor of the Parish of St. Mary, Islington. Mr. Edmund J. Harrison, Architect to the Guardians, 23, Berkeley-road, Crouch End, N.8 Deposit £2.

AUGUST 24.—**Manchester.**—CONVENIENCES.—For the erection of men's conveniences at Southern Cemetery, for Parks and Cemeteries Committee. City Architect, Town Hall, Deposit 10s. 6d.

AUGUST 24.—**Rosyth.**—SHOPS, &C.—Erection of 15 shops, with eight houses over same, at Rosyth, and 40 houses, also at Rosyth. Mr. A. H. Mottram, A.R.I.B.A., Scottish National Housing Co., Ltd., 111, George-street, Edinburgh.

AUGUST 24.—**Tarbert.**—MEMORIAL.—For the mason and granite work required in the erection of Harris War Memorial at Tarbert, Harris. Architect, Mr. John G. Chisholm, 15, Union-street, Inverness.

AUGUST 24.—**Wigan.**—JOINERY.—For joinery work in connection with construction of portable floor at municipal baths, for the T.C. Mr. R. B. Donald, Borough Engineer, Wigan. Deposit, £1 1s.

AUGUST 25.—**Addiscombe.**—TELEPHONE EXCHANGE.—For erection of a Telephone Exchange at Addiscombe (Surrey). Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 25.—**Chelmsford.**—PAINTING, &C.—Cleaning and painting the interior of the scarlet fever block and military pavilion, for the Joint Hospital Board. Messrs. C. & W. H. Pertwee & Howard, London-road, Chelmsford.

AUGUST 25.—**Glossop.**—POST OFFICE.—For a Post Office and Telephone Exchange at Glossop. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

*AUGUST 25.—**Greenwich.**—WAR MEMORIAL.—Erection of War Memorial on a site at the boundary of Greenwich Park, at the southern end of Maze Hill, Greenwich, for the War Memorial Committee, in conjunction with the Greenwich Borough Council. Mr. C. P. Courtenay, Borough Engineer, Town Hall, Greenwich, S.E.10. Deposit £2 2s.

AUGUST 25.—**Liverpool.**—BUILDING.—Erection of a Telephone Exchange at Walton, Liverpool, for the Commissioners of His Majesty's Office of Works. Contracts Department, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 25.—**London, N.W.**—HOT WATER HEATING.—Installation of hot water heating and domestic supply in a large block of flats now being erected in Maida Vale, London, for the Central London Building Co., of 24, Grove End-road, St. John's Wood, N.W.8. Mr. W. C. C. Hawtayne, Consulting Engineer, 9, Queen-street-place, London, E.C.4. Deposit £3 3s.

AUGUST 25.—**Ludlow.**—SORTING OFFICE.—Erection of a sorting office, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 25.—**Surrey.**—BUILDING.—Erection of Telephone Exchange at Addiscombe, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 25.—**Wednesbury.**—POST OFFICE.—For alterations, &c., at Wednesbury Post Office, for H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 26.—**Brighouse.**—HOUSES.—Erection of 12 Type "B" Houses at Smith House-lane, for the T.C. Mr. P. T. Grove, Town Clerk, Town Clerk's Office, Brighouse.

AUGUST 26.—**Bruton.**—HALL, &C.—Erection of a memorial hall, library, and classrooms, for the Governors of the King's School, Bruton. Mr. A. J. Pictor, F.R.I.B.A., Bruton. Deposit £2 2s.

AUGUST 26.—**Celbridge.**—WALLS.—Repair of the boundary walls of the Burial Grounds at Esker, Lucan, Loughtown, Newcastle, and Saggart, for the R.D.C. Mr. F. Shortt, Clerk, Council Office, Celbridge.

AUGUST 26.—**Cwmdu.**—LIBRARY.—For erection and completion of a Library and Institute at Cwmdu, Bridgend-road, Maesteg, for the Trustees and Committee of Messrs. Norths' Workmen's Libraries and Institutes. Mr. Oswal D. Davies, Architect and Surveyor, 18, King's-terrace, Nantyffyllon. Deposit £2 2s.

AUGUST 26.—**Hucknall.**—HOUSES.—For erection and completion of additional houses (to be built in pairs), for the U.D.C. Messrs. Sands & Walker, Milton Chambers, Milton-street, Nottingham. Deposit £3 3s.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Masons' Brick-layers' Labourers.	Plas-terers'
Aberdeen	1/7	1/10½	1/7	1/7½	1/8	1/9	1/7	1/2 to 1/4	
Airdrie	1/8	1/8	1/8	1/8	1/8	1/8	—	1/5	
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2	
Arbroath	1/7	1/7	1/7	1/7	1/7	1/7	1/8	1/1	
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Bathgate	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/7	—	
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Coatbridge	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/4	
Dumfries	1/6	1/6	1/6	1/6	1/6	1/8	1/8	1/2	1/2½ 1/3½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/2	
Duns	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/0	
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Falkirk	1/8	1/8	1/8	—	1/8	1/8	1/9	1/3	
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	—	1/1½	
Galashiels	1/6	1/6	1/6	1/6	1/6	1/6	—	1/1½	
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Greenock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/1 to 1/3	
Hamilton	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/7½	
Hawick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Helensburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Inverness	1/6½	—	1/6	1/7	1/6½	1/7	1/6	1/0 to 1/3	
Kilmarnock	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2	
Kirkwall	1/5	1/5	1/4	1/7	1/5	1/5	1/4	1/2	
Lanark	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2	
Motherwell	1/8	1/8	1/8	1/8	1/8	1/8	—	1/3	
Perth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/2	
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Stirlingshire (Eastern District)	1/8	1/8	1/8	1/8	1/8	1/8	1/9	1/3	
Wishaw	1/8	1/8	1/8	1/10	1/8	1/8	1/9	1/3	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 252.

AUGUST 26.—**Maesteg.**—ERECTION OF LIBRARY AND RECREATION INSTITUTE.—For erection and completion of library and recreation institute at Cwmddy maesteg. For Messrs. North. Mr. Oswal D. Davies, 18 King's-terrace, Nantyffyllon.

AUGUST 26.—**Maesteg.**—PAINTING AND RENOVATING.—For the painting and renovating of Messrs. North's (Colliery Co.), Memorial Hall, Maesteg. Mr. Oswal D. Davies, 18, King's-terrace, Nantyffyllon.

AUGUST 26.—**Winchester.**—SCHOOL.—Erection of new Council School at Romsey (with army hutting), for the Romsey County Council. Mr. A. L. Roberts, County Architect, The Castle, Winchester. Deposit £1 1s.

AUGUST 28.—**Bradford.**—PAINTING.—For painting at St. James's Market cold stores and abattoirs, and external painting at various schools, for Bradford T.C. City Architect, Town Hall, Bradford.

AUGUST 28.—**Edinburgh.**—VARIOUS WORKS.—For minor repairs and renewals, involving carpenter work, plumber work, plaster and cement work; also a considerable amount of plain painter work, at Bangour Farm buildings and sheds, for the District Board of Control. Mr. J. D. Gibson, Surveyor, 60, Frederick-street, Edinburgh.

✱AUGUST 28.—**Lancs.**—POST OFFICE.—Erection of Post Office at Formby, Lancs., for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. of Works, King Charles-street, London, S.W.1. Deposit, £1 1s.

✱AUGUST 28.—**London, S.E.**—FENCING.—Erection of wrought-iron standards and wire netting about 1,000 ft. in length at Southwark Park, S.E., for the L.C.C. Chief Officer, Parks Department, The County Hall, Westminster, Bridge, S.E.

AUGUST 28.—**Percy Main.**—HOUSES.—For two dwelling-houses at Low Row, Percy Main, for the Tyne Improvement Commissioners. Mr. J. McDonald Manson, General Manager and Secretary, Tyne Improvements Commission Office, Bewick-street, Newcastle-upon-Tyne. Deposit £2 2s.

AUGUST 31.—**Musselburgh.**—HOUSES.—For the erection of 20, or alternatively 10, houses at Monktonhall-terrace, for the Corporation. Mr. W. Constable, Architect, 3, Hill-street, Edinburgh.

AUGUST 29.—**Risbridge.**—BOILER HOUSE, &C.—Erection of boiler house, chimney shaft, and boiler setting, &c., at Kedington Institution, near Haverhill, for the Board of Guardians. Mr. H. B. Thake, Architect, Haverhill. Deposit, £1 1s.

✱AUGUST 30.—**London, S.W.**—STEEL-FRAMED BUILDING.—Erection of a steel-framed building (paint shop) at the Mead Works, Carnwarth-road, Fulham, S.W.6, for the Metropoliatn Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

AUGUST 30.—**Mansfield.**—HOUSES.—**Erection of 24 houses, Type A, on Bull Farm Site, for the T.C. Mr. Waude Thompson, A.M.Inst.C.E., Borough Engineer and Surveyor, Market-street, Mansfield.**

AUGUST 30.—**Preston.**—MATERIALS AND WORK BUILDING.—Supply of materials and work necessary in connection with the foundations, buildings, &c., for the Ribble Power Station, for the County Borough of Preston. Town Clerk, Town Hall, Preston. Deposit £2 2s.

AUGUST 30.—**Skipton.**—WALL.—Taking down and rebuilding a retaining wall at Hazelgill, near Oughtershaw, for the R.D.C. Mr. A. Rodwell, Surveyor, Skipton.

✱AUGUST 31.—**Middlesex.**—TELEPHONE EXCHANGE.—Erection of a Telephone Exchange at Hounslow, Middlesex, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 31.—**Mynyddislwyn.**—REPAIRS AND PAINTING.—For painting and repairing of council offices and caretaker's house at Pontllanfraith. Mr. A. E. John, Engineer and Surveyor, Council Offices, Pontllanfraith. Deposit £1 1s.

AUGUST 31.—**Stowmarket.**—HOSPITAL WARDS.—For the erection of two new wards and offices at the Isolation Hospital, Bury-road, Stowmarket, for the U.D.C. Architects, Messrs. Hunt & Coates, Abbey-gate-street, Bury St. Edmunds.

AUGUST 31.—**Mynyddislwyn.**—REPAIRS AND PAINTING.—For repairs and painting of Council offices, for U.D.C., at Pontllanfraith. Mr. A. E. John, Engineer and Surveyor, Council Offices, Pontllanfraith. Deposit £1 1s.

✱SEPTEMBER 1.—**Aldershot.**—ARTIFICERS' WORK.—Artificers' work (maintenance Contracts) from October 1, 1922, at the (1) South Aldershot, including Ewshott and Crookham; (2) Bordon, with outstations, Bramshott Camp and Chiddingford Remount Depot; (3) Longmoor Stations in the South Aldershot Royal Engineer District of the Aldershot Command. Chief Engineer, Royal Engineer Office, Headquarters, Aldershot, Hants.

SEPTEMBER 1.—**Hants.**—REPAIRS AND MATERIALS.—Tenders are required for the works contracts from October 1, 1922, at various stations in the North Aldershot Royal Engineer District of the Aldershot Command. Commanding Royal Engineer, Royal Engineers' Office, Mariborough Lines, North Aldershot, Hants.

SEPTEMBER 2.—**Tyldesley.**—HOUSES.—Erection of 26 houses, for the U.D.C. Housing Architect, Mr. F. E. Jones, Council Offices, Tyldesley. Deposit £2 2s.

✱SEPTEMBER 8.—**Norwich.**—HOUSES.—Erection of 24 houses on the Mile Cross Estate, Norwich, for the Corporation. The architects: Mr. S. G. Livock, 128, Unthank-road, Norwich; Messrs. A. F. Scott & Sons, 24, Castle Meadow, Norwich; Mr. G. J. Skipper, 7, London-street, Norwich; Mr. S. J. Wearing, 3, Redwell-street, Norwich.

✱SEPTEMBER 5.—**Essex.**—TELEPHONE EXCHANGE.—Erection of a Telephone Exchange, Woodford Green, (Essex), for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit, £1 1s.

✱SEPTEMBER 6.—**Bridgend.**—POST OFFICE.—Erection of Post Office at Bridgend for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit, £1 1s.

✱SEPTEMBER 6.—**Derby.**—TELEPHONE REPEATER STATION.—Erection of a telephone repeater station at Derby, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit, £1 1s.

✱SEPTEMBER 6.—**Streatham.**—EXTENSIONS.—Extension of Streatham Telephone Exchange for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit, £1 1s.

SEPTEMBER 10.—**Gosforth.**—HOUSES.—Erection of 20 semi-detached houses, for the U.D.C. Mr. George Nelson, Surveyor, Council Chambers, High-street, Gosforth.

SEPTEMBER 11.—**Birmingham.**—ASSEMBLY HALL.—For the erection of an Assembly Hall at the Children's Homes, Shenley Fields, for the Birmingham B.C. Mr. James Curtis, Clerk to the Guardians, Union Offices, Edmund-street, Birmingham. Deposit £5.

✱SEPTEMBER 11.—**Walthamstow, E.**—HOUSES.—Erection of 14 houses on their Forest-road (Fitzwygram) Housing Site, for the U.D.C. Council's Engineer, Mr. G. W. Holmes, Town Hall Annexe, Walthamstow. Deposit £1.

✱SEPTEMBER 12.—**Featherstone.**—HOUSES.—Erection of 12 houses on the Church Fields Site, Purton, for the Featherstone U.D.C. Mr. Samuel Chesney, A.R.I.B.A., Council Offices, Featherstone, near Pontefract. Deposit 2 guineas.

SEPTEMBER 19.—**Durham.**—ALTERATIONS, ETC.—For builder's work in connection with High Houghall Farm: (1) Alterations to cottages; (2) conversion of farm buildings into poultry station, for the County of Durham Education Department. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

NO DATE.—**Arkengarthdale.**—SUNDAY SCHOOL.—For Wesleyan Sunday School and Institute, Arkengarthdale, Richmond, Yorks. Messrs. Kellett & Clayton, P.A.S.I., Architects and Surveyors, High-row Chambers, Darlington.

NO DATE.—**Bradford.**—SHED.—For erection of shed at Midland Mills, Bradford, for Messrs. J. Ambler & Sons. Messrs. Samuel Jackson & Son, Architects, 17, Piccadilly, Bradford.

NO DATE.—**Haughley.**—REPLASTERING, ETC.—For replastering and painting front of Glebe House, Haughley. Rev. W. G. White, The Vicarage.

✱NO DATE.—**Various Towns.**—ORDINARY WORKS AND REPAIR.—Execution of ordinary works and repairs to the buildings in various towns in the charge of the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit 10s. 6d. in respect of each district.

FURNITURE, MATERIALS, etc.

AUGUST 21.—**Chelmsford.**—HOUSE.—Supply of 500 feet of 2½ in. canvas hose for Fire Brigade purposes, for the T.C. Mr. E. J. Miles, Chief Officer, 16, London-road, Chelmsford.

AUGUST 21.—**Dewsbury.**—FENCING.—For providing and fixing fences and gates on housing sites, for the T.C. Mr. H. Dearden, Borough Surveyor, Dewsbury.

AUGUST 22.—**Stow-on-the-Wold.**—C.I. PIPES.—Supply of cast-iron pipes and fittings for water services, for the U.D.C. Mr. H. Challen Sharp, Clerk, Church-street, Stow-on-the-Wold.

AUGUST 22.—**Westwell.**—RAGSTONE.—For the supply of 200 yds. best Kentish Ragstone, for the West Ashford B.G. Mr. J. M. Poncia, Clerk, 17, Bank-street, Ashford, Kent.

AUGUST 25.—**Littleover.**—STREET LAMPS.—Repair and renewal of street lamps in the parish. Mr. H. Clive Copestake, Clerk, 16, Tenant-street, Derby.

AUGUST 26.—**Woodford.**—MATERIALS, &C.—Road materials, steam rolling and scarifying, &c., for the U.D.C. Mr. William Farrington, Surveyor, Council Offices, Woodford Green, Essex.

AUGUST 28.—**Chatham.**—PAVING STONE.—Supply of 2½ in. Yorkshire stone paving to the T.C. Mr. R. L. Honey, Borough Surveyor, Town Hall, Chatham.

AUGUST 28.—**London.**—W.I. STANDARDS AND NETTING.—Wrought-iron standards and wire netting at Southwark Park, S.E., for the L.C.C. Chief Officer, Parks Department, County Hall, Westminster, S.E.

AUGUST 29.—**Wandsworth.**—ROAD MATERIALS.—Supply of granite (broken), steam rollers (hire of) and scarifying, tar (refined), &c., to the B.C. Mr. D. A. Nicholl, Town Clerk, Council House, Wandsworth, S.W. 18.

AUGUST 30.—**Hemsworth.**—TANK.—For a cast-iron overhead tank, for the R.D.C. Mr. W. T. Lynam, Engineer to the Council.

AUGUST 31.—**Batley.**—HEATING INSTALLATION.—For installation of heating apparatus at Batley Ex-Service Men's Club. Mr. J. L. Evans, The Club, 31, Bradford-road, Dewsbury.

AUGUST 31.—**Durham.**—ROAD MATERIALS, &C.—Supply to the Durham County Council of road materials, tools, &c. Mr. Albert E. Brookes, County Surveyor, Shire Hall, Durham.

AUGUST 31. — **Stockton-on-Tees.** — MATERIALS. — Supply of stores to the District Fund, Gas, and Electricity Committees. Borough Engineer, the Gas Engineer, and the Electrical Engineer. Borough Hall, Stockton-on-Tees.

SEPTEMBER 1.—**London.**—BOILER PLATES, &C.—Supply of steel boiler plates, steel axles for locos., carriages and wagons, and steel boiler tubes, for the South Indian Railway Company, Ltd. Company's Offices, 91, Petty France, Westminster, S.W. 1. Charge, 10s. per specification.

SEPTEMBER 4.—**Finsbury.**—MATERIALS.—Supply of materials to the B.C. Borough Surveyor, Town Hall, Rosebery-avenue, E.C.

SEPTEMBER 11.—**London.**—STORES.—Supply of various stores to the Metropolitan Water Board. Chief Engineer, New River Head, 173, Rosebery-avenue, E.C. 1.

SEPTEMBER 18.—**Brighton.**—BOILER HOUSE PLANT.—For two water-tube boilers and accessory plant, for the Corporation. Mr. J. Christie, Borough Electrical Engineer, North-road, Brighton. Deposit, £2 2s.

SEPTEMBER 29.—**Birmingham.**—MACHINE TOOLS.—For power driven lathes, machine tools, line shafting and pulleys, for Nechells Generating Station. Mr. E. J. Jennings, Secretary, 14, Dale-end, Birmingham. Deposit, £1 1s.

FEBRUARY 1, 1923.—**Auckland.**—ELECTRIC CRANES.—For the supply of twelve five-ton (alternatively three-ton) semi-portal balanced jib electric quay cranes, four five-ton (alternatively three-ton) balanced jib electric roof cranes, and six one-ton electric monorail cranes, for Auckland Harbour Board. Messrs. W. & A. McArthur, Ltd., 18-19, Silk-street, Cripplegate, London, E.C. 2. Deposit, £2 2s.

NO DATE.—**Dundee.**—GRANITE SETTS.—For the supplying of 900 tons of granite setts, for the T.C. Mr. Jas. Thomson, City Engineer, 91, Commercial-street, Dundee.

ENGINEERING, IRON AND STEEL.

AUGUST 18.—**London.**—EXCAVATORS.—Supply to the High Commissioner for India of steam dragline excavators. Director-General, India Store Department, Branch No. 12, Belvedere-road, Lambeth, S.E.1.

AUGUST 19.—**Birkenhead.**—FLUES.—Supply and fixing of internal flues for a Lancashire boiler at the Union Institution, Derby-road, for the Board of Guardians. Mr. S. R. Carter, Clerk, Poor Law Offices, Conway-street, Birkenhead.

AUGUST 19.—**Middleton.**—PIPES.—Supply of (1) 1,000 yds. of 12 in. socket and spigot cast-iron gas pipes in 12 ft. lengths, and (2) 1,840 yds. of 6 in. socket and spigot cast-iron gas pipes in 12 ft. lengths, and (3) about 3 tons of specials. Gas Engineer, Gas Works, Towneley-street, Middleton.

AUGUST 21.—**Dover.**—RAILS.—Supply of 100 tons of British standard tramway rails. Mr. Wm. Boulton Smith, Borough Engineer, Maison Dieu House, Dover.

AUGUST 22.—**Bampton.**—RESERVOIRS.—Contruction of two covered concrete reservoirs, one with a capacity of 40,000 gals. and one of 60,000 gals.; engine house with oil engine and pump; and the laying of about 300 lineal yards of 3 in. main, &c., for the U.D.C. Mr. Henry Monson, Surveyor, Bampton, Devon.

AUGUST 22.—**Manchester.**—TRAMWAY PLANT.—Supply to the Tramways Committee of permanent way points, tongues, crossings, and hardened steel centres. Mr. H. Mattinson, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

AUGUST 23.—**London.**—STEEL WORK.—Supply to the Assam-Bengal Railway Co. of structural steel work, galvanised work, &c., for workshops. Offices of the Company, Bishopsgate House, 80, Bishopsgate, E.C.2. Charge £1 1s.

AUGUST 25.—**London.**—HEATING INSTALLATION.—The Central London Building Company, of 24, Grove End-road, St. John's Wood, N.W.8, invite tenders for a complete installation of hot-water heating and domestic supply in a large block of flats now being erected in Maida-vale, London. Mr. W. C. C. Hawtayne, consulting engineer, 9, Queen-street-place, London, E.C.4. Deposit £5 5s.

AUGUST 28.—**Edinburgh.**—BRIDGE.—Supply and erection of a steel plate girder bridge (60 ft. span), to carry 24 in. water main across the water of Leith, for the T.C. Messrs. J. & A. Leslie & Reid, 29, Waterloo-place, Edinburgh. Deposit, £5.

AUGUST 28.—**Haddington.**—WASHING MACHINE.—Provision and installation of washing machine, necessary engine, &c., in the Hospital at Haddington. Mr. Geo. Cruickshank, County Clerk, Haddington.

AUGUST 30.—**London.**—TELEPHONES, &C.—(*a*) Installation of telephones, Colindale Hospital, Hendon; (*b*) supply and erection of an electric storage battery at the Grove Fever Hospital, Tooting-grove, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C. 4. Deposit, £1 each contract.

AUGUST 30.—**Newcastle-on-Tyne.**—CROSSINGS.—Supply to the Tyne Improvement Commission of four diamond crossings for the Albert Edward Dock, North Shields. Mr. J. McDonald Manson, General Manager, Bewick-street, Newcastle-upon-Tyne. Deposit, £1.

AUGUST 30.—**Newcastle-on-Tyne.**—BOILER.—Boiler for locomotive tank engine for the Albert Edward Dock, North Shields, for the Tyne Improvement Commissioners. Mr. J. McDonald Manson, General Manager, Offices, Bewick-street, Newcastle-upon-Tyne. Deposit £1.

AUGUST 31.—**Grimsby.**—HEATING, &C.—New centralised heating and hot water supply plant, fuel economiser, water softening plant, and additions to cooking apparatus, at the Institution of the Board of Guardians. Mr. J. F. Wintringham, Clerk, St. Mary's Chambers, Great Grimsby.

AUGUST 31.—**London, S.E.**—ELECTRIC LIGHTING.—For electric lighting installation at Cornwall House, S.E., and H.M. O. Works, King Charles-street, S.W. 1. Deposit £1 1s.

AUGUST 31.—**Reigate.**—FENCING.—Supplying and fixing 176 lineal yards of wrought-iron fencing, for the Hooley Recreation Ground, for the T.C. Mr. F. T. Clayton, Borough Engineer, Municipal Building, Reigate.

SEPTEMBER 1.—**London.**—STEEL WIRE, &C.—For the supply of (1) steel wire, annealed, galvanized and black; (2) Dowlas, brown, drab, and white, for Indian Government. Director-General, India Store Department, Branch No. 18, Belvedere-road, Lambeth, S.E. 1.

SEPTEMBER 1.—**New South Wales.**—BRIDGE.—The time for receipt of tenders for the construction of the superstructure and substructure of a cantilever bridge across Sydney Harbour has been extended by the New South Wales Government until September 1. Australia House, London, W.C.2.

SEPTEMBER 2.—**Bournemouth.**—PIER WORKS.—For new deck joists, decking, &c., required on the Bournemouth Pier. Mr. F. P. Dolamore, Borough Engineer, Town Hall, Bournemouth. Deposit £1 1s.

SEPTEMBER 4.—**Mansfield.**—REFUSE PLANT.—Supplying and erecting of refuse screening plant, for the T.C. Mr. Waude Thompson, Borough Engineer, Market-street, Mansfield. Deposit, £2 2s.

SEPTEMBER 5.—**Cardiff.**—LABOUR.—Supply of (1) electrical, (2) mechanical engineering labour in daywork in Cardiff, for H.M. Office of Works. Contracts' Branch, H.M. Office of Works, King Charles-street, London, S.W.1.

SEPTEMBER 5.—**Edinburgh.**—ELECTRIC CRANES.—Conversion of two overhead cranes from mechanical to electrical operation. Tramways Manager, 2, St. James-square, Edinburgh.

SEPTEMBER 15.—**Guayaquil.**—WHARF.—**The Government of Ecuador has extended the time for tenders for the construction of a custom-house wharf at Guayaquil until September 15. Consul-General of Ecuador, 23, College-hill, Cannon-street, E.C.**

SEPTEMBER 18.—**South Rona.**—BEACON.—Construction of a concrete beacon on a tidal rock which lies off the northern end of South Rona, for the Commissioners of Northern Lighthouses. Mr. C. Dick Peddie, Secretary, Northern Lighthouse Board, Edinburgh. Deposit £1.

SEPTEMBER 20.—**Richmond (Surrey).**—PUMPING PLANT.—(1) Supply, at the Water-lane pumping station of two steam pumping engines; (2) one electrically-driven centrifugal Booster pump for the high-level district supply, for the T.C. Mr. H. Will. Apted, Water Engineer, Waterworks, Richmond (Surrey). Deposit £1 1s.

NO DATE.—**Gwaun-Cae-Gurwen.**—PIT SHAFT.—About 320 yds. deep 18 ft. diameter. Mr. T. M. Jones, Gwaun-Cae-Gurwen Colliery, Gwaun-Cae-Gurwen.

ROAD, SANITARY, AND WATER WORKS.

AUGUST 18.—**Failsworth.**—SANITARY.—For (a) the plumbers' work and (b) the supply of sanitary fittings in connection with the conversion of 200 pail closets into water closets, for the U.D.C. Surveyor, Town Hall, Failsworth, near Manchester.

AUGUST 18.—**Middlesbrough.**—RECONDITIONING BLOCKS.—For the reconditioning of 90,000 hardwood paving blocks, for the T.C. Mr. S. E. Burgess, Borough Engineer, Municipal Buildings, Middlesbrough.

AUGUST 18.—**Southampton.**—ROADS.—Repair of roads at the Ordnance Survey Office, Southampton, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s.

AUGUST 19.—**Bridlington.**—PAVING.—Laying of about 1,300 sq. yds. of York flags, and 520 sq. yds. of non-slip flags. Borough Engineer, No. 1, The Crescent, Bridlington. Deposit £1 1s.

AUGUST 21.—**Darlaston.**—SEWERS, &C.—Construction of stoneware pipe sewers and sewerage work, for the U.D.C. Messrs. Dodd, Dodd & Watson, County Chambers, Corporation-street, Birmingham. Deposit £5.

AUGUST 21.—**Rainworth.**—SPORTS GROUND.—For laying out sports ground at Rainworth, near Mansfield, for the Bolsover Colliery Co., Ltd. Mr. Percy B. Houfton, Architect, Furnival Chambers, Chesterfield.

AUGUST 22.—**Edinburgh.**—DRAINAGE.—For the drainage works at Craiglockhart Poorhouse, for Edinburgh Parish Council. Mr. J. M. Johnston, Architect, 47, Charlotte-street, Leith.

AUGUST 22.—**Romford.**—SEWER.—Construction of 1,800 ft. of 3 ft. diameter sewer for sewerage works at Hornchurch, for the U.D.C. Mr. William Fairleigh, Parliament-mansions, Westminster, S.W.1. Deposit £5.

AUGUST 22.—**York.**—WIDENING AND RESURFACING.—For widening and resurfacing with tar grouted slag macadam, the Ratione Tenuræ portion of the York and Wigginton-road, for the North Riding County Council. County Surveyor, County Hall, Northallerton.

AUGUST 23.—**East Ashford.**—PATHS, &C.—For laying roads and paths at the East Ashford (Kent) Housing Scheme, for the Commissioners of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1.

AUGUST 23.—**Hexham.**—WATER SUPPLY.—Providing and laying about 4,000 lineal yds. of 3 in. diameter cast iron pipes, &c., in connection with the Slaley Water Scheme, for the R.D.C. Mr. C. Franklin Murphy, Lloyds Bank Chambers, Morpeth. Deposit £2.

AUGUST 24.—**Hollingbourn.**—DRAINAGE.—For new cesspool drainage at Holm Mill, Harrietsham, for the R.D.C. Mr. F. Miskin, Clerk, 33, Earl-street, Maidstone.

AUGUST 24.—**Litherland.**—SEWER.—Construction of a 30 in. diameter reinforced concrete pipe sewer, for the U.D.C. Mr. Geo. Ponsford, Surveyor, Council Offices, Litherland.

AUGUST 25.—**Doncaster.**—SEWER.—Laying about 206 yds. of 9 in. sewer, 164 yds. of 9 in. surface water drain, and 66 yds. of 6 in. surface water drain at New Edlington, for the R.D.C. Mr. W. R. Crabtree, Union Offices, Nether Hall, Doncaster.

AUGUST 25.—**Doncaster.**—WATER MAINS.—Laying about 300 yds. of 3 in. C.I. water mains at the New Village, Edlington. Mr. W. R. Crabtree, Surveyor, Union Offices, Nether Hall, Doncaster.

AUGUST 26.—**Newark.**—ROADS.—For tar-spraying about 17,000 super yds. of road, for the R.D.C. Surveyor, 27, Winchelsea-avenue, Newark.

AUGUST 28.—**Barnet.**—ROAD REPAIRS.—Carrying out temporary repairs to Normandy-avenue, for the U.D.C. Mr. W. B. Chancellor, Surveyor, Municipal Offices, Wood-street, Barnet, Herts.

AUGUST 28.—**Broom.**—BRIDGE.—For erection of a bridge (24 ft. long), near Broompark Village, for the Parish Council. Mr. John Bradley, Clerk to the Council, Broompark, near Durham.

AUGUST 28.—**Edinburgh.**—ROADS.—For laying foot-pavements, concrete, kerb and channels, metalling of existing roads, and fencing, on Wardie Housing Area, for the T.C. Burgh Engineer, 1, Parliament-square.

AUGUST 28.—**Willesden.**—ROADS.—Widening part of Dudden Hill-lane and Neasden-lane, for the U.D.C. Mr. F. Wilkinson, Town Hall, Dyne-road, Kilburn, N.W. 6. Deposit, £2 2s.

AUGUST 30.—**South Elmsall.**—SEWAGE WORKS.—For the construction of screening chamber, septic tank, storm water tanks, sludge lagoons, percolating filter, humus tank, sand filters, &c., for the Hemsworth Rural District Council. Mr. W. T. Lyman, A.M.I.C.E., Engineer to the Council. Deposit £2 2s.

AUGUST 31.—**Ashton-under-Lyne.**—RECONSTRUCTION.—For reconstructing portions of Church-street and Wellington-street in granited rock asphalt or bituminous macadam. Mr. J. Rowbottom, Borough Surveyor, Ashton-under-Lyne.

SEPTEMBER 12.—**Bushey.**—ROADS.—For surfacing certain footpaths with tar-paving and other works, for the U.D.C. Mr. Ernest E. Ryder, Surveyor, Bushey, Herts. Deposit £2 2s.

SEPTEMBER 12.—**Gosforth.**—ROADS.—Making up various streets, for the U.D.C. Mr. George Nelson, Surveyor, Council Chambers, High-street, Gosforth.

SEPTEMBER 13.—**London.**—PUMPING PLANT.—Supply and erection of pumping machinery at Surbiton Pumping Station, Surrey, for the Metropolitan Water Board. Offices of the Board (Room 182), Chief Engineer's Dept., 173, Rosebery-avenue, Clerkenwell, E.C.1. Deposit £3 3s.

Competitions.

(See Competition News, page 228.)

Auction Sales, Tenders, etc.

AUGUST 24.—**Hants.**—Mr. E. A. Scammell will sell by instructions from the Eastleigh and Bishopstoke U.D.C., with the approval and consent of the Minister of Health, at the Junction Hotel, Eastleigh, the well-equipped steam brickworks, together with plant and machinery. There is a continuous kiln. Auctioneers, Eastleigh, Hants.

✱AUGUST 29.—**London, S.W.**—Messrs. Veryard & Yates will sell at 255, Clapham-road, S.W., large stock of timber and building material. Auctioneers, 365, Norwood-road, S.E.27.

✱SEPTEMBER 16.—**Acton.**—BUILDING PLANT.—Offers for the whole or part of surplus building plant now lying in stores in Brassie-avenue on the East Acton Housing Estate. Mr. Wm. Hodson, Town Clerk, Borough of Acton, Municipal Offices, Acton, W.3, endorsed "Tenders for Surplus Plant."

SEPTEMBER 20.—**Pinner.**—Messrs. Duncan B. Gray & Partners will sell, in about 30 lots, at the Parish Hall, Pinner, freehold building plots on the Barrow Point Estate, Pinner. Auctioneers, 129, Mount-street, Grosvenor-square, London, W.1.

Public Appointments.

✱AUGUST 28.—**London, S.E.**—Visiting Teacher of Heating and Ventilation required by the L.C.C. at the School of Building, Ferndale-road, Brixton, for one evening a week. Education Office (T.I.a), The County Hall, Westminster Bridge, S.E.1

SEPTEMBER 2.—**Staffordshire.**—**Architect and Surveyor required by the Education Committee. Salary £800 (no Bonus).** Mr. Graham Balfour, Director of Education, County Education Offices, Stafford. Endorsed "Architect."

SEPTEMBER 18.—**Leeds.**—**Lecturers required to give instruction to advanced students on Monday or Wednesday evenings, commencing September 18. Subjects: Building Construction and Structural Work.** Director of Education, Education Office, Leeds.

TITANIUM OXIDE AS A PAINT MATERIAL.

MR. NOEL HEATON, B.Sc., gave a lecture before the Royal Society of Arts, 18, John-street, Adelphi, recently, on "The Production of Titanium Oxide and its use as a Paint Material."

After describing the manufacture and chemical properties of the material, Mr. Heaton said titanium white had chemical properties which rendered it of the utmost value as a pigment, particularly for the preparation of protective paints. Owing to the fact that titanium oxide, like silica, was the most chemically stable compound of the metal, the pigment was extremely resistent to attack by any of the destructive agencies to which it was likely to be exposed. That it would resist the attack of sulphuric acid, which was notoriously the chief destructive agent in the air of towns, would be readily conceded when one considered that the pigment was actually produced in the presence of free sulphuric acid. Neither was it liable to discoloration by sulphuretted hydrogen because titanium did not readily form a coloured sulphide. Being also a fully oxidised body and in the crystalline state, it was not readily attacked by sea air or salt water, which were most severe upon most pigments. One would, therefore, expect great durability from paints made with this pigment, and the point had been most carefully investigated on a most elaborate scale by means of practical exposure tests.

In the tests, paints made with every available white pigment in every possible combination had been painted on boards and exposed side by side since 1918. Information as to the effect of over three years' exposure was, therefore, now available, although, as a matter of fact, the conditions of exposure had been so drastic, the boards being exposed to a direct south aspect at an angle of 45 deg., that he considered the weathering effect was equivalent to at least five years of exposure under ordinary conditions. He had had the opportunity of studying those tests minutely and examining in detail the methods of preparing the paints and the precautions taken to render the data obtained reliable. The general results might be summarised to the effect that the paints made with titanium pigment had shown no tendency to crack or peel, but had worn down evenly and uniformly, the surface finally becoming powdery ("chalking," as it is technically termed) and remaining in an excellent condition for repainting. As a matter of fact, the most durable paint of all proved to be that prepared from a combination of titanium white with a proportion of zinc oxide. One could readily understand that that should be the case, because owing to the complete chemical inertness of titanium it did not have any hardening action on the oil, so that paints made with pure titanium were inclined to be too elastic. The well-known hardening effect of zinc on the oil, which rendered paint made entirely with it unsuitable for outside use, had, therefore, the effect of giving the necessary hardening to the paint, provided it was added in moderation.

Owing to the fact that titanium was not a definitely basic pigment like lead or zinc, but quite neutral in character, that inertness or lack of action on the vehicle with which it was mixed to form paint, was one of its characteristics, and for that reason it was rather slow drying in character. That was an advantage rather than otherwise for some purposes, such as the preparation of artists' colours, but a disadvantage where the conditions of painting demand fairly quick drying, as in ordinary house painting. The preparation of paints from it which would dry in the reasonable time required by the decorator did not, however, present any serious difficulty in practice.

Owing to the chemical stability of the material, it was possible to use it for those methods of painting where none but the most permanent of pigments were admissible, such as true fresco painting, where the pigment had to stand the action of caustic lime.

More important, from the practical and economic point of view, was the fact that on account of that chemical stability it was not readily absorbed into the system if accidentally inhaled or otherwise taken into the body by the painter in the course of his work. In order to be so absorbed it was necessary for the pigment to be re-acted upon by the gastric or other juices and converted into soluble salts, and being practically unattacked by any such solvents it passes through the system without being absorbed. Even if they assumed that it could be so absorbed, however, it was generally conceded that the soluble salts of titanium were quite harmless. One might believe, therefore, with the utmost confidence, that the pigment was absolutely non-poisonous and harmless in use, a consideration of great practical importance at the present time. As a matter of fact, one of the unlooked-for and somewhat surprising uses to which it had been put for that very reason was in the preparation of cosmetics and face powders.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERAYRON.—The Council has instructed the surveyor to submit estimates for painting and repairing the Public Hall, and for approach work to the Hall.

BARRY.—Lord Plymouth has offered to the T.C. a site for a public reading-room and library at Barry Island.

BRANDON.—The Brandon and Byshottles U.D.C. has decided to obtain tenders for twenty extra houses.

BRANSTON.—The Lindsay B.C. has decided that, subject to the approval of the Ministry of Health, an expenditure not exceeding £2,250 be incurred on the adaptation and equipment of a laundry at Branston sanatorium, and that not more than £5,250 be spent on furniture and equipment at the sanatorium.

BRIDGEND.—The U.D.C. has passed the following plans:—New houses in Bowack-street, for Mr. Idris Davies; new office at Tanyord, Brackla-street, for Mr. Hardwicke Price; new house in Coity-road, for Mr. Edward Joute. The Council have also instructed the surveyor to procure tenders for painting and repairing of all the vehicles used by the Council for haulage.

CARLISLE.—A housing scheme has been adopted by the City Council—149 cottages are to be built.

CUMBERLAND.—A proposed widening of the Keswick-Ambleside-road by the County Council is estimated to cost £700. Other road improvements are expected to cost £800.

DAWLISH.—The T.C. has decided to apply to the Ministry of Health for sanction to borrow £12,000 for improving the water supply.

DERBY.—The licensing justices have passed plans presented by Mr. T. H. Stevenson, the licencee, for alterations at the "Tiger Vaults."

DEWSBURY.—Plans passed by T.C.: Mr. H. Crawshaw, garage, Park-road, Savile Town; Mr. F. Summerscales, additions, 58, Upper-road, Batley Carr; Mr. G. W. Lodge, bungalow, Thornhill Edge; Mr. Fegan, alterations, "Man and Saddle" Hotel; Mr. W. Fenton; lock-up shop, Broad-street; Mr. H. Askham, garage, Claremont-road; Messrs. James France & Co., tentering room, Albert Mills, Mill-street West.

DISS.—Plans for the extension of Messrs. Barclay's Bank, Market-place, and of Mr. Weaver's premises, Mere-street, have been passed by the U.D.C.

DOCKING.—A committee is dealing with a proposed water supply scheme.

DUNFERMLINE.—A warrant has been issued by the Dean of Guild granting permission to the Scottish National Housing Company to erect forty dwelling houses at Rosyth on the triangular section of ground bounded by Queensferry-road, King's-road, and Park-road extended. Each house is to consist of a living-room, parlour, and three bedrooms, and the work will be undertaken at once.

DURHAM.—The T.C. has approved of plans for houses to be built by the Dean and Chapter.

EDINBURGH.—At the last Dean of Guild Court thirty-four full petitions were on the roll, and of these warrants were granted in the case of twenty-seven to proceed. There were also fourteen applications for minor applications, and of these twelve were remitted to the Burgh Engineer. Among the full petitions for which warrant was granted were the following: Bertrams, Ltd., for extension of foundry buildings at Westfield-road; Edinburgh Corporation, for new car shelter at Craiglockhart car terminus; pavilion at Murrayfield Park, Succoth-avenue, for Edinburgh School of Cookery; new villa at Comiston-road, for Mr. Christopher Gale; new cottage at Craiglockhart-avenue, for Mr. Wm. Harper; sub division of villa at 18, Bright's-crescent into two houses, for Mr. Sydney Kay; St. Cuthbert's Co-operative Association, Ltd., for erection of shops with basement at the corner of East Claremont-street and Broughton-road; new cottage at Charterhall-road, for Mrs. C. Wardrop; sub division of house at 24, Learmonth-terrace into two separate houses; and house at 28, Moray-place into three separate houses, for Mr. John White; reconstruction of Willowbrae Bowling Club pavilion, Barnscourt-terrace, recently destroyed by fire; sub division of house at 18, Grosvenor-crescent into three separate houses, for Mrs. F. C. Proudfoot; and the erection of two blocks of shops and dwelling-houses at Chesser-avenue, Gorgie, for St. Cuthbert's Co-operative Association, Ltd. Among the minor applications was that for the erection of a war memorial for George Heriot School in the school grounds at Lauriston.

FAREHAM.—Plans passed by U.D.C.: Mr. T. Draper, two cottages in King's-road; Mr. J. Stewart, store at No. 20, Bungalow, Frost Hole-road; Captain Riches, workshop and store in High-street; Mr. Dore, workshop at 139, Gordon-road; Mr. L. C. Bennett, lock-up shop in West-street; Mr. L. C. Bennett, garage and shop in West-street.

FOLKESTONE—NEW SPORTS GROUND FOR.—An estimated expenditure of £30,000 for providing a new sports ground, thirty acres in extent, and bought from Lord Radnor for £30,650, has been approved by the Folkestone Council. It is hoped that when the new ground is finished the Kent County team will hold a cricket week every year at Folkestone. The levelling and preparation of the land, which will provide work for the unemployed, will cost £5,000.

GATESHEAD.—Additional schemes involving an expenditure of £80,134 for the provision of work for the unemployed, were approved by the B.C. at its last sitting, and have been submitted to the Government grant department.

GLASGOW.—The Dean of Guild Court, at its last meeting, had before it no fewer than thirty-seven new applications for linings for buildings, the estimated total cost of which was £190,255. The majority of the applications were passed, though among those continued for further consideration were petitions relating to the proposed construction of a new picture house in Byres-road by the Botanic Gardens Picture House, Ltd.; and to a new church proposed to be built in Maryhill-road by the Glasgow North-West Mission of the Wesleyan Methodist Church. Of especial importance among the plans passed were those of Messrs. William M'Laren, Sons & Co., Ltd., for a warehouse of eight stories to be erected, at an estimated cost of about £65,000, at the junction of George-square and South Hanover-street, in place of the buildings which were destroyed by fire some time ago; and for new public baths which the Corporation propose to erect at White-street, Govan, at an estimated cost of £42,110. The Dean of Guild (Sir Alexander Gracie) presided. Included among the plans passed were the following: The Merrylee Property Investment Co., Ltd., 100, West George-street, to construct roads, sewers, footpaths, &c., at Merrylee, Kilmarnock-road; Shell-Mex, Ltd., to erect petroleum stores at goods yard Caledonian Railway depot, Kinning Park; Governors of the Victoria Infirmary, to make alterations and additions to the infirmary; Glasgow Academy Co., Ltd., to erect pay-boxes at sports ground at Anniesland; Rowan & Boden, Ltd., 29, West George-street, to erect a workshop at Baltic-street, at Summerfield-street, Bridgeton; Corporation of Glasgow (Electricity Department), to erect two electricity sub-stations at Mosspark, Govan; Corporation of Glasgow (Baths and Washhouses Department), to erect public baths at White-street and Wallace-street, Govan; William M'Laren, Sons & Co., Ltd., warehousemen, Glasgow, to erect a warehouse of eight stories and basement at George-square and South Hanover-street; Bremner & Co., Ltd., 104, West George-street, to erect a workshop in Bilbao-street at Fauldhouse-street.——As a result of the report submitted by Mr. Dalrymple, tramway manager, which has been considered by the Tramway Sub-Committee on Extensions, employment will be provided for some 400 men. The Cathkin scheme, widening the road to Cathkin Braes from Burnside terminus, costing about £60,000, will employ 200 men for eighteen months; and the Anniesland extension of tramways westward to the completion of the road widening scheme beyond Anniesland will require 100 men for nine months, the estimated cost being £70,000; while the construction of a tramway track on the Moss Park Boulevard is expected to employ 100 men for four months—the cost being £30,000. Taking the contemplated tramway extension as a whole, it is reckoned that the total expenditure involved will be over £500,000.

HAILSHAM.—The R.D.C. has decided to take steps to provide housing accommodation for the surveyor and inspector of No. 1 district.——Plans for the rebuilding of Bodle-street Church have been approved.

HALIFAX.—The T.C. has passed a resolution for the appointment of a Committee to interview the Ministry of Health with a view to obtaining permission for the Corporation to erect, at its own expense, 500 working-class houses, free of Government control.——Plans have been prepared for between forty and fifty detached and semi-detached houses near Skircoat-road. The architect is Mr. Medley Hall, of Halifax. The plans include a roadway.

HELSTON.—The R.D.C. has been informed that the Ministry of Health has sanctioned a loan of £1,700 towards the cost of the Trelowarren Drive scheme.

HIGHBRIDGE.—The Bristol Water Works Company is prepared to give the U.D.C. the necessary site and a sum of £100 towards the cost of erecting sanitary accommodation at Cheddar Cliffs, in view of the many thousands of visitors who were attracted to that locality each week, and for whom little or no provision existed at present. The Engineer has been instructed to prepare the necessary plans, &c., for the erection of the accommodation.

LAMPETER.—The Council is applying for sanction to borrow £2,000 in connection with Mort extension work, and £400, estimate, for laying storm relief sewers in Market-street and Station-terrace.

LEATHERHEAD.—The U.D.C. has approved a plan for the erection of a Roman Catholic Church, dedicated to St. Mary, in St. John's-avenue, for the Rev. R. W. Petts.

LEXDEN AND WINSTREE.—The Board of Guardians has had a report from Messrs. Sands & Walker, of Nottingham, giving an estimate for draining certain thoroughfares. The total cost is put at £4,150. A grant from the Unemployment Grants authority is to be asked for.

MERTHYR.—The Ministry of Health has written asking why the Guardians propose doing work at the Llwydcoed Boys' Home by direct labour instead of contracting the work out. The Ministry withholds assent to the proceeding until satisfied on the poin .

MORPETH.—Plans passed by R.D.C.: Bungalow, West Thirston, for Mr. J. Weir; garage, Red Row, for Mr. T. Donaldson.

MOULSOE.—Lord Lincolnshire has given a site for a parish recreation hall.

NEWPORT.—It was reported to a meeting of the Newport Borough Council that the Ministry of Transport had favourably considered the extensive road formation scheme put forward by the Council, and that the Roads Board was anxious that the work should proceed immediately.

PEMBROKE DOCK.—The Board of Management of the Pater Estate, have discussed the acquisition of the Old Athletic Ground for the town. It is proposed to lay this out as a recreation ground. The surveyor reported favourable sites near the County School for laying out bowling greens and tennis courts. He was instructed to submit estimates at next meeting.——The Urban Council has instructed the surveyor to submit estimates for the cost of laying a new road which will be called Memorial-road.

PONTADAWE.—A deputation from the U.D.C. has waited upon the Ministry of Health with regard to sanction for an estimated expenditure of £69,000 on a water scheme for Amman Valley. It was reported to the Council that a favourable reply may be expected in three weeks' time. The Council approved estimates, as follows, for work to be done:—Ynysygelan Bridge, £1,770; widening Beulah-road, £255; widening Rhyden-road, £412; and widening Gwilyn-road, £142.

ROUNDTHWAITE.—A bridge is to be built at an approximate cost of £350. The East Westmoriand D.C. is interested.

SELBY.—Councillor A. Cochrane, O.B.E., managing director of Messrs. Cochrane & Sons, ship builders, Selby, has undertaken to defray the cost of enlarging the operating theatre at the Selby Hospital.

SOUTHPORT.—The Highways and Works Committee of the Corporation has decided to repave a road with lithocrete bitumen at a cost of £1,887.

SPILSBY.—An inquiry has been held by the Ministry of Health into the application of the R.D.C. for sanction to borrow £28,900 for the purchase and extension of the local water undertaking.

SWANSEA.—Plans have been approved by the Great Western Railway Company which will provide Swansea with one of the best-equipped and most up-to-date railway stations in the country. The present High-street station is being set back 30 ft. and the platforms lengthened. The Company are spending a quarter of a million on the scheme, which is to be put in hand immediately. A large number of properties adjacent to the line will have to be demolished.——The Roman Catholics of Swansea have decided to erect a new church in the Uplands district, for which a site has been secured at a cost of £1,000, and also a new school in the Greenhill district.

TORQUAY.—The Works Sub-Committee has approved the following plans: Pair of villas in Torbay-road, Mr. R. E. Narracott; dwelling house in Ilsham-road, Mr. G. H. Crabtree; dwelling-house in Ridgway-road, Mr. H. C. Marshall; dwelling house in Parkhurst-road, Mr. C. H. Collins. It is to be left to the sub-committee to inspect the site of five houses in Warberry-road West, plans of which were submitted, and to approve the plans if they comply with the by-laws.

TREDEGAR.—The Governors of the Tredegar Park Cottage Hospital report that they intend to make extensive additions to the premises.

UPWEY.—The scarcity of houses in this district is about to be relieved to some extent by the erection on land acquired from the Upwey Manor Estate of a number of brick-built bungalows. The architect is Mr. G. A. Andrews, F.I.S.E.; and the contractors, Messrs. J. A. Parsons, of Weymouth.

WITHAM.—Plans are before the U.D.C. for the conversion of Bridge House into bungalows.

WOLSTANTON.—The Staffordshire C.C. is purchasing a site for a school for the trustees of the late Sir Geo. Chetwynd.

WOLVERHAMPTON.—Plans passed by T.C.: T. Skidmore & Son, roof over yard, Birch-street; T. R. Whitehead, cart shed, Alma-street; — Boswell, bungalow, Park-avenue; E. L. Wolverson, alterations 6, Tettenhall-road; A. Griffiths, two villas, Jeffcock-road; Rr. J. Groom, bungalow, Bruford-road; L. Beavon, alterations, Pool-street; W. Grosvenor, shop window, Moor-street; Sellman & Hill, alterations, Stewart-street; A. J. Stevens (1914), Ltd., offices, Graiseley Hill; W. Case, shop window, Lea-road; H. Powell, cottage, Claremont-road; D. H. W. Thompson, steel garage, Oaks-crescent; G. J. C. Broom, two w.c.'s, Salop-street; E. C. Berry, portable building, Springfield-road; Home & Colonial Stores, Ltd., new shop front, Chapel Ash; Smith & Co., store room, Horsman-street.

WOODHALL SPA.—An agreement has been arrived at and negotiations are practically completed for the sale by the Victoria Hotel Company, Woodhall Spa, Lincs, of the whole of their property to the trustees of the estates of Sir Archibald and Lady Weigall. It is the intention of Sir Archibald to place himself at the head of a movement for the reconstruction of the company, with the object, at the earliest possible moment, of rebuilding the hotel, which was almost totally destroyed by fire two years ago.

FIRES

BRISTOL.—A fire, which did considerable damage, has occurred at Eaton Crescent, Clifton, the residence of the Town Clerk of Bristol, Mr. E. J. Taylor.

DULVERTON.—Ellerton's grocery stores have been destroyed by fire.

EDINBURGH.—A fire has occurred at the Castle Mills of the North British Rubber Co. The top floor of a building was destroyed and the lower stories damaged.

GARNETHILL.—An outbreak of fire has occurred in premises occupied by Messrs. Walker & Co., medical electricians, 9, Thistle-street.

GLASGOW.—An outbreak of fire has occurred in the premises of Messrs. Robt. S. Connell & Son, hair merchants, at 71, Mountblue-street, Camlachie.

GLASGOW.—A fire, estimated to have caused damage to the extent of £2,000, has occurred at the Clydesdale Cabinet Works, 110, John-street.

GUISELEY.—The boot factory of Mr. Nathaniel Claughton has been almost completely destroyed by fire.

MACDUFF.—A fire at William & Chas. West's fish curing premises is estimated to have caused £1,500 worth of damage.

RUNCORN.—A fire has occurred in the large store premises used by Mr. J. Eden in Penketh-lane.

* See also our List of Contracts, Competitions, etc.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 2 0
Second Hard Stocks	3 17 0

Per 1000. Delivered at London Goods Station.

	£ s. d.
Flettons, at King's Cross	3 1 0
Do. grooved for plaster	3 3 0
Do. Bullnose	3 16 0
Best Stourbridge Fire bricks:—	
2½ in.	11 3 0
3 in.	13 2 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	24 0 0
Headers	23 10 0
Quoins, Bullnose and 4½in. Flats	30 10 0
D'ble Str'tch'rs	32 10 0
D'ble Headers	29 10 0
One Side and two Ends	33 10 0
Two Sides and one End	34 10 0
Splays and Squints	32 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	13 6	per yard, delivered 2 miles radius Paddington.
Pit Sand	16 0	
Thames Sand	16 6	
Best Washed Sand	16 6	
½ in. Shingle for Ferro-Concrete	14 0	
¼ in. " "	15 0	
⅜ in. Broken Brick	10 6	
Pan Breeze	5 6	

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification Test	£3 3 0 £3 8 6

56/- alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	10 0
Roman Cement	8 15 0
Parian Cement	5 17 0
Keene's Cement, White	5 17 0
" " Pink	5 12 0
Plaster, Coarse, Pink	3 10 0
" " White	3 17 6
" Fine	5 12 0
Sirapite, Coarse	3 16 0
" Finish	4 4 0
Grey Stone Lime	2 16 6
Chalk Lime	2 16 6
Best Ground Blue Lias Lime	2 18 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 1
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 4
Do. do. delivered on road wagons at Nine Elms Depot	3 5
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 7
Do. do. delivered on road wagons at above stations, per ft. cube	4 8
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ¼d. beyond 30 ft.

	s. d.
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 10½
6 in. rubbed two sides, ditto "	6 4½
3 in. sawn two sides slabs (random sizes) "	2 5½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 4
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	6 0
6 in. sawn two sides landing to sizes (under 40ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto, ditto "	2 5½
2 in. self-faced random flags Per Yard Super	8 4

ARTIFICIAL STONE.

Delivered in London Area in full van loads.	s. d.
Plain	8 6 per ft. cube.
Moulded	10 0 " "
Cills	11 0 " "

WOOD.

GOOD BUILDING DEALS.

Inches	per stan.	Inches.	per stan.
4 × 11	£36 0	3 × 6	£22 10
4 × 9	36 0	3 × 11	25 0
4 × 8	30 0	2 × 11	25 0
4 × 7	30 0	3 × 9	25 0
3 × 8	30 0	2½ × 9	30 0
3 × 7	25 0	3 × 4½	20 10
2½ × 7	22 10	3 × 4	20 10

PLANED BOARDS.

1 × 11	42 10	1 × 9	37 10

PLAIN EDGE FLOORING.

Inches	per sq.	Inches	per sq.
⅜	20/-	1¼	32/6
½	22/6	1½	44/-
1	25/-		

WOOD (*Continued*).

TONGUED AND GROOVED FLOORING.

Inches	per sq.
1	25/-
1¼	32/6
1½	44/-

MATCHINGS (BEST).

Inches	per sq.
⅜	17/6
½	22/6
1	25/-

BATTENS.

Inches	s. d.
¾ × 2	3 0 per 100 ft.

SAWN LATHS.

Per bundle	0 3 9

Dry Wainscot Oak, per ft. super, as inch	0	2	6	to	0 3 6
¼ in. do.	0	1	10½	to	0 2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	3	to	0 3 0
Cuba Mahogany	0	3	6	to	0 4 0
Teak (Rangoon, Moulmein or Java), per load	52	10	0	to	55 0 0
American Whitewood planks, per ft. cube	0	16	0	to	0 18 0
Best Scotch Glue, per cwt	7	2	0	to	—
Liquid Glue, per cwt.	4	18	0	to	6 0 0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	46 10 0	18 by 10	26 5 0
22 by 12	42 5 0	18 by 9	23 2 6
22 by 11	39 0 0	16 by 10	22 0 0
20 by 12	37 2 6	16 by 8	17 2 6
20 by 10	31 15 0		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 0 0
Ditto hand-made ditto	6 10 0
Ornamental ditto	6 15 0
Hip and valley tiles (per dozen) Hand made	0 8 6
Machine made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	14 0 0
Plain Compound Girders	16 0 0
" " Stanchions	18 0 0
In Roof Work	21 0 0

WROUGHT IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from Works. 5 per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes. (all sizes).	Fittings, Up to 2".	Fittings, Over 2".	Flanges. Up to 2".	Flanges. Over 2"
Gas	55 %	50 %	55 %	60 %	65 %
Water	50 %	45 %	50 %	55 %	60 %
Steam	45 %	40 %	45 %	50 %	55 %
Galv'd—					
Gas	45 %	42½ %	47½ %	52½ %	57½ %
Water	37½ %	37½ %	42½ %	47½ %	52½ %
Steam	27½ %	32½ %	37½ %	42½ %	47½ %

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 2½	2 5	2 11
2½ in. "	3 9½	2 8	3 8
3 in. "	4 5½	2 11	4 4
3½ in. "	4 10½	3 8	5 1
4 in. "	5 5	4 1	5 10

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	2 1	1 7½	2 2½
2½ in. " "	2 3½	1 10½	2 7½
3 in. " "	2 9	2 4	3 6
3½ in. " "	3 3	2 9½	4 1
4 in. " "	3 8	3 4½	4 11½

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices per yd.: 4 in., 5/3. .. 5 in., 6/9. .. 6 in., 8/-.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	13 0 0	to	14 0 0
Staffordshire Crown Bars — good merchant quality	14 0 0	..	15 0 0
Staffordshire "Marked Bars"	16 0 0	..	17 0 0
Mild Steel Bars	12 0 0	..	13 0 0
Steel Bars, Ferro-Concrete quality, basis price	12 0 0	..	13 0 0
Hoop Iron, basis price	15 0 0	..	16 0 0
" " Galvanised	29 0 0	..	31 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	14 0 0	..	15 0 0
" " " 24 g.	15 0 0	..	16 0 0
" " " 26 g.	16 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	21 0 0	..	22 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	24 0 0	..	26 0 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9ft. 20 g.	20 0 0	..	21 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	20 10 0	..	21 10 0
Ordinary sizes, 6ft. to 9ft. 26 g.	22 10 0	..	23 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	24 0 0	..	25 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	25 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	26 10 0	..	27 10 0
Cut Nails, 3in. to 6in.	23 0 0	..	24 0 0

(under 3in. usual trade extras.)

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot superficial.

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	35 0 0	..	—
Pipe in coils	35 10 0	..	—
Soil Pipe	38 0 0	..	—
Compo pipe	29 0 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	21	0 0	.. —
Do., ex country, carriage forward per ton	22	0 0	.. —
COPPER—			
Strong Sheet per lb.	3	2 3	.. —
Thin " "	0	2 4	.. —
Copper nails "	0	2 3	.. —
Copper wire "	0	2 4	.. —
TIN—English Ingots "	0	1 9	.. —
SOLDER—Plumbers' "	0	0 10	.. —
Tinmen's "	0	1 0	.. —
Blowpipe "	0	1 3	.. —

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES

	Per Ft.		Per Ft.
15 oz. fourths	3½d.	32 oz. fourths	8½d.
" thirds	4½d.	" thirds	10d.
21 " fourths	5½d.	Obscured Sheet, 15 oz.	4½d.
" thirds	6d.	21 "	7d.
26 " fourths	6½d.	Fluted and Enamelled 15 "	8½d.
" thirds	7½d.	21 "	10½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	6d.
¼ Rough rolled	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	9½d
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes per gallon	0 4 5
" " "	in barrels "	0 4 7
" " "	in drums "	0 4 10
Boiled " "	in barrels "	0 4 9
" " "	in drums "	0 4 11
Turpentine	in barrels "	0 7 9
"	in drums (10 gall.) "	0 8 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		55 15 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	77 10 0
Red Lead, Dry (packages extra)	per ton	58 0 0
Best Linseed Oil Putty	per cwt.	0 17 0
Filecot	per cwt.	0 15 6
Size. X D Quality	fkn.	0 4 6

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto	ditto	1 12 0
Floor Varnish	Inside	0 16 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 16 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 0
Best Black Japan		0 14
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 9 0
Berlin Black		0 14 0
Knotting (patent)		1 5
French and Brush Polish		1 2 6
Liquid Dryers in Turpentine		0 12 6
Cuirass Black Enamel		0 7 6

* The information given on this page has been specially compiled for THE BUILDER and is correct. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	15	0
Add if in clay	" "	1	6
Add for every additional depth of 6 ft.	" "	0	9
Planking and strutting to trenches	per foot super	0	7
Do to sides of excavation, including shoring	" "	1	2

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	0
Add if in floors 6 in. thick	" "	3	9
Add if in beams	" "	4	6
Add if aggregate 1 : 2: 4	" "	11	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	34	0	0
Add if in stocks	"	8	10	0
Add if in Staffordshire blues	"	24	0	0
Add if in Portland cement and sand	"	3	0	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	3
Setting ordinary register grates and stoves	each	1	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	5	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	7	6
Three-quarter-inch vertical damp course	" "	11	0
½ inch on flats in two thicknesses	" "	8	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	4

MASON.

York stone templates fixed	per foot cube	16	3
York stone sills fixed	" "	28	6
Bath stone and all labour fixed	" "	12	0
Portland stone fixed	" "	21	6

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	79	9
Do. 20 in. × 10 in. Do. Do.	"	90	9
Do. 24 in. × 12 in. Do. Do.	"	99	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	6
Do. joists	" "	6	0
Do. roofs, floors and partitions	" "	6	6
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	60	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and bearers	"	1	1

FLOORING.		¾"	1"	1¼"	1½"
Deal edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/8	2/1	2/3	2/9

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	3
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights : average size	" "	4	0

DOORS.

		1¼"	1½"	2"
Two-panel square framed	per ft sup.	2/4	2/7	2/9
Four-panel Do.	"	2/8	3/0	3/3
Two panel moulded both sides	"	3/0	3/3	3/6
Four-panel Do. Do.	"	3/3	3/7	3/10

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/9	1/10	2/1
Deal shelves and bearers	"	1/6	1/8	1/11
Add if cross tongued	"	2d.	2d	2d

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2 2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail ; average 3 in. × 3 in	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt	56	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10
Copper nailing	" "	0	7

	½"	¾"	1"	1½"	2"	4"
Drawn lead waste per ft. run	10d.	1/6	1/9	3/1	3/10	
Do. service "	1/5	1/11	2/3	3/6		
Do. soil "						6/2
Bends in lead pipe each					3/3	8/2
Soldered stop ends "	1/2	1/8	2/1	2/10	3/6	
Red lead joints "	11d.	1/-	1/3	1/11	2/4	4/0
Wiped soldered joints "	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws "				14/7	19/6	
Bib cocks and joints "	6/4	9/7	15/4	41/-		
Stop cocks and joints "	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	9
Do. Do. Sirapite	" "	2	11
Do. Do. Keen's	" "	4	0
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	10
Portland cement screed	" "	2	1
Do. plain face	" "	3	9
Mouldings in plaster	per 1 girth	5	3
One-and-a-half granolithic pavings	per yard sup.	6	4

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	1
26 oz. Do.	" "	1	4
Obscured sheet	" "	1	8
¼ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
½ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	0
Knotting and priming	" "	0	8
Plain painting 1 coat	" "	0	11
Do. 2 coats	" "	1	7
Do. 3 coats	" "	2	4
Do. 4 coats	" "	3	0
Graining	" "	2	5
Varnishing twice	" "	1	11
Sizing	" "	0	4
Flatting	" "	0	8
Enamel	" "	1	3
Wax polishing	per foot sup	0	9
French polishing	" "	1	3
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 11 should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PUBLIC HEALTH ACT:

CLEANSING CESSPOOLS.

THE recent case, Leck *v.* Epsom Rural District Council (1922, 1 K.B. 383), raised a point of interest to occupiers of houses in rural districts. The appellant in this case had owned and occupied a house at Burgh Heath, within the respondent Council's district, since 1914. The house was of the rateable value of £100, and in 1920 the appellant was assessed for special expenses, including sewerage rate in the sum of £8 19s. 2d., which he paid. During the whole period of the appellant's occupancy the respondents had, when requested by the appellant, cleansed the cesspool, and for a considerable time before May, 1920, the respondents had cleansed cesspools in their district when requested to do so. The house occupied by the appellant had been built in 1911, and the plans of the house with the cesspool had been approved by the Council, but in that year the respondents had no control over the size of cesspools.

By-laws were in existence under which the obligation to cleanse cesspools once at least in every three months was imposed upon the occupiers of premises, but these by-laws had not been enforced. Up to and including October 15, 1920, the respondents had always emptied the appellant's cesspool when requested to do so, but about April, 1919, the respondents had pointed out to the appellant that his requests were made at too frequent intervals, and that the cesspool accommodation was insufficient, but that the difficulty could be got over by the provision of a soakaway for bath water only, and the cost would be about £20. These complaints as to the frequent applications had been repeated.

In April and May, 1920, the respondents had passed a resolution by which it was resolved that any resolution adopting section 42 of the Public Health Act, 1875, so far as it related to the cleansing of cesspools should be rescinded as well as any resolutions imposing duties on the Council in respect of cleansing cesspools. No notice of these resolutions had been given at any material time to occupiers except on August 4, 1920; the respondents' surveyor had written to the appellant that owing to the heavy cost of emptying cesspools the Council had decided they could only empty cesspools once in every three months, and if they were asked to empty them more frequently the cost of so doing must be paid by the occupier.

The cesspool had been emptied by the Council on October 15, 1920, and on November 25 the appellant had written to the respondents requesting them to empty the cesspool "one day next week." The respondents' surveyor replied that the cesspool could not be emptied within three months of October 15, unless the appellant was prepared to pay £2 12s. On December 6 the appellant under protest sent a cheque for this amount, and on December 8 the cesspool was cleansed. The appellant laid a complaint before the justices, but the justices dismissed the complaint on the ground that the respondents' decision to cleanse the cesspools once in three months was reasonable, and they had "a reasonable excuse" for not complying with the appellant's requirement, and this was an appeal from this decision.

A great many points were argued in the case, which turned upon sections 42–44 of the Public Health Act, 1875, but the Court did not decide the point as to whether or not the local authority had undertaken the cleansing of cesspools under section 42, but confined themselves to the facts of this particular case under section 43, which provides that the local authority who have undertaken such duties shall be liable to penalties if "without reasonable excuse" after notice in writing they fail to cleanse the cesspool, and the Court found that the justices had evidence before them which showed there was a "reasonable excuse" in this case, for the respondents had emptied nearly 30,000 gallons from this cesspool during the year and were willing to empty it further on request for a small payment, and the construction of a soakaway would have rendered more frequent emptying than once in three months unnecessary.

The Court was careful to point out that nothing in the judgments delivered must be taken as limiting the liability of local authorities in the fulfilment of their duties, and if they undertake the duty of emptying cesspools they must undertake it in its entirety, and must not demand extra payment for the performance of their statutory duties, but the nature of that duty had to be determined by the requirements of the community as a whole, and not by the requirement of a particular individual, and applying this test to the facts of this case the justices were justified in finding that a reasonable fulfilment of the statutory duty was to empty the cesspools in their district once in three months, and there was reasonable excuse for their declining to comply with the appellant's requirements.

TRADE NEWS.

Messrs. Wright, Anderson & Co., Ltd., structural engineers, Gateshead-on-Tyne, have removed their London office to 11, Carteret-street, Queen Anne's Gate, Westminster, S.W. 1. Telephone No.: Victoria 6529.

Mr. William Sharp, M.I.Mech.E., constructional engineer, has removed his offices to 11, Carteret-street, Queen Anne's Gate, Westminster, S.W. 1. Telephone No.: Victoria 6529.

Messrs. Alexander Jack & Co., Ltd., crane makers, Motherwell, have removed their London office to 11, Carteret-street, Queen Anne's Gate, Westminster, S.W. 1. Telephone No.: Victoria 6529.

Messrs. R. W. Greeff & Co., Ltd., Queen-street-place, London, E.C. 4, are the sole agents in England for Titanium white, which is now being produced on a large scale.

The firms constituting Radiation Limited, viz.: Arden Hill & Co., The Davis Gas Stove Co., Fletcher Russell & Co., The Richmond Gas Stove Co., Wilsons & Mathiesons, and John Wright & Co., announce a further reduction in the prices of all their gas stoves invoiced at list prices less usual trade discounts. This reduction will take the form of altering the present discounts to the trade off current list prices from 12½ per cent. to 17½ per cent., and in the case of gas radiators from 22½ per cent. to 27½ per cent.

Messrs. Adamsley, Ltd., of Scotswood-on-Tyne, have issued an illustrated pamphlet describing their new "Triovia" water-closet.

The adaptability of the well-known "Henley" wiring system is well brought out in an illustrated brochure issued by Messrs. W. T. Henley's Telegraph Works Co., Ltd., Blomfield-street, E.C.2, which illustrates a number of large residences, public buildings, schools, hotels, housing schemes, &c., in which it has been installed.

Building Products, Ltd., Columbia House King's-road, Sloane-square, S.W.3, have sent us a copy of a pamphlet on Cabot's sound deadening and thermal insulating quilt, a scientifically-constructed lining for making houses warm in winter and cool in summer, for deadening sound in floors and partitions, for insulating cold stores, refrigerators, ice-houses, &c.

We have received a copy of Messrs. Shaw, Knight & Co.'s (Bishop Auckland) new illustrated catalogue of enamelled fireclay sanitary ware and fittings.

Messrs. Wood, Russell & Co., Central House, 34 and 36, Oxford-street, W.1, have issued a leaflet describing an entirely original design of hot water boiler, viz., "Sentry," Duplex No. 6, which they have produced.

Mr. J. L. Emms, Shepherd's Bush, W.12, was the sub-contractor for the cast lead gutters, etc., used in connection with the new London County Hall.

Nuroads, Ltd., Gray's Inn-road, W.C.1, have sent us particulars of their Nuwood jointless flooring and Granosaic paving, which was laid throughout the All England Lawn Tennis Ground, including the royal enclosure, in special colours and designs.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

***Denotes *accepted*. † Denotes *provisionally accepted*. ‡ Denotes *recommended for acceptance*. § Denotes *accepted subject to modifications*.**

GLASGOW.—For the erection of 349 tenement houses at Hamilton-hill for the T.C.:—

‡Bremner & Co. (Glasgow), Ltd.—*Mason work*	£38,029
‡George Brown—*Joiner work*	27,903
‡James Anderson & Co.—*Plumber work*	24,095
‡Glasgow Building Guild—*Slater work*	4,575
‡City Glass Co.—*Glazier work*	770

HUMBER.—For initial work of renewing New Holland Pier, for the Great Central Railway Co.:—

*Logan & Hemingway, Doncaster	£39,240

LEEDS.—For painting works, for the T.C.:—

*W. H. Pitts—Judges' house	£131 3 0
*Dearden Bros.—Civil Court and adjoining rooms	346 5 0
*Carter & Frankland—Council Chamber, Law Library, &c.	388 15 6
*L. E. Wilkinson—Crown Court and adjoining rooms	315 4 0
*H. Shann—Portions of interior of No. 11, Park-square	63 11 6

LEEDS.—Erection of high level pump house at Thorpe Stapleton, for the T.C.:—

*Paul Rhodes	£15,276

MAIDENHEAD.—For widening Widbrook Common Bridge:—

*Cox & Sons	£277

MOUNTAIN ASH.—For erection of a general hospital of 37 beds, for the Hospital Committee, Messrs. Thomas & Morgan & Partners, architects, 23, Gelliwastad-road, Pontypridd:—

T. F. Howells, Caerphilly	£39,375 10 0
John Morgan & Son (Aberdare), Ltd.	39,000 7 10
Walter Jones & Sons, Westminster	37,000 0 0
Thornton Hall, Haverfordwest	36,000 0 0
W. W. Peck, Cardiff	35,226 18 4
R. E. J. Haines & Sons, Cardiff	34,733 14 11
E. R. Evans & Bros., Cardiff	34,700 0 0
G. Warlow & Co., Merthyr	34,313 6 11
J. O. West, Whitchurch	34,047 2 6
Unit Construction Co., Ltd., London	33,947 10 4
Hybart, Broadhead & Co., Ltd., Reading	33,874 0 0
E. Turner & Sons, Ltd., Cardiff	33,231 5 3
Watkin Williams & Sons, Cardiff	33,056 0 0
Knox & Wells, Ltd., Cardiff	32,346 0 0
D. Davies & Sons, Cardiff	32,294 0 0
W. Blackburn & Co., Treharris	31,987 10 2
Price & Morgan, Ltd., Cardiff	31,026 0 0
Wm. T. Nicholls, Ltd., Gloucester	29,894 0 0
Building & Public Works Construction Co., Ltd., Swindon	29,663 0 0
R. Meara, Abersychan	29,438 15 9
*Richard Jones, Caerphilly	28,420 0 0
W. Alban Richards & Co., Ltd., Cardiff	28,310 0 0

NEWPORT.—For the erection of 52 houses on the Somerton Estate, for the Corporation:—

†King & Co.	£18,348

RAINHAM.—For farm buildings at East Moor street Farm, Rainham, for the Kent C.C. Mr. W. H. Robinson, architect, Linton, near Maidstone:—

	Price per set. Wood.	Brick.
W. J. Parker, London	£277 0 0	£313 0 0
The National Building Guild, Maidstone	237 5 0	281 15 6
H. R. Cowell, Sheerness	237 17 6	250 0 0
J. W. Ellingham, Dartford	210 0 0	246 0 0
W. Pattinson & Sons, London	210 0 0	245 0 0
Y. J. Lovell & Son	207 0 0	237 0 0
F. L. Honess, Yalding	205 0 0	230 0 0
Merton Hughes, Baronscourt	174 0 0	210 0 0
Cox Bros., Maidstone	170 0 0	194 0 0
Norman Smith & Son, Maidstone	166 5 0	189 5 0
Alexander Osborne, Rochester	168 12 0	187 3 0
C. E. Skinner & Son, Chatham	166 0 0	184 0 0
G. Gates & Sons, Rochester	161 0 0	170 0 0
Kemp Bros., Rainham	144 7 6	154 0 0
‡West Bros., Ltd., Strood	149 15 0	149 15 0

SURBITON.—For erection of six houses, for the U.D.C. The Surveyor, Council Offices, Ewell-road, Surbiton:—

H. D. Ebbutt, Croydon	£3,600
A. Hossack, Tolworth	3,600
Dilliway & Elvy, Kensington	3,402
H. L. Boaler, Shepperton	3,375
Slatter & Turner, Kingston	3,154
Daniels & Cometti, Leyton	3,060
Rutherford & Woolford, Tolworth	2,990
W. J. Parker, Ltd., London	2,880
W. H. Gaze & Sons, Ltd., Kingston-upon-Thames	2,773
C. Groom, Son & Co., Drayton Green	2,591
Thorogood Bros. & Son, Surbiton	2,580
Woodbridge & Humphreys, Westcliff-on-Sea	2,440
†W. C. Morgan, Olney	2,280

POLLOKSHAWS.—For erection of 36 houses of three and four apartments, and three shops, for the T.C. :—

*Brown, Fraser & Co.—*Mason work*	£8,907
*Matthew Dunbar—*Joiner work*	5,469
*Munro & Miller—*Plumber work*	3,019
*H. S. Bathgate—*Plaster work*	1,367
*Wm. Walker & Sons—*Slater work* (for tenements only)	760
*George G. Kirk—*Glazier work*	249

PONTARDAWE.—For laying of sewers to Godregraig housing site for the U.D.C. :—

*Roger H. Thomas, Pontardawe £395 11 2

SEATON DELAVAL.—For erecting a new elementary school to accommodate 440 scholars, for the Northumberland C.C. Mr. C. Williams, Director of Education, The Moothall, Newcastle-upon-Tyne :—

*Stephen Fenwick & Co., Newcastle-upon-Tyne £8,870 4 8

STOCKTON-ON-TEES.—For erection of public convenience at Norton, for the T.C. :—

*J. C. Watson, Stockton..... £346 4 5

STRETFORD.—For the construction of concrete water duct, &c., at generating station, for the U.D.C. :—

*Smith & Briggs, Old Trafford..... £6,585

STRETFORD.—For extension of the cemetery, for the U.D.C. :—

*Geo. Clark & Son..... £635 2 6

UXBRIDGE.—Erection of 42 houses on Hillingdon-road Site, for the U.D.C. :—

*Walter Jones & Co..... £17,923

WANDSWORTH.—For painting works at St. James' Hospital and the Medical Superintendent's House, Ouseley-road, Balham, S.W.12 :—

M. Greenwood & Son, Ltd., Harlesden	£1,206 6 7
A. G. Winter, South Norwood	1,165 0 0
Hudson Bros., London	1,075 0 0
S. T. Wright, Clapham Junction	998 10 0
Phelps & Wilton, Ltd., Streatham-hill	990 0 0
H. Meckhonik, London	961 0 0
F. C. Flack, Southfields	924 18 3
*R. Haslam & Son, Woolwich	643 15 0

WELLINGTON.—For construction of relief and railway sewer—(1) for stoneware pipe sewer; (2) for concrete tube sewer, for the U.D.C. Mr. G. H. Connor, Engineer and Surveyor, Council Offices, Wellington :—

Engineer and Surveyor's estimates—	(1) £ 9,045 3 11	(2) £7,822 19 6
Hussey & Egan, Birmingham—	(1) 18,614 9 11	(2) ——
Martin & Elements, Smethwick—	(1) 16,471 9 4	(2) 17,488 9 10
Muirhead, McDonald Wilson & Co., Ltd., Birmingham—	(1) 15,074 10 7	(2) 13,656 5 2
C. Jackson, Tipton—	(1) 10,784 19 2	(2) 11,437 18 1
Roberts, Ltd., Birmingham—	(1) 9,999 0 0	(2) 9,999 0 0
H. Boot & Son, London—	(1) 9,826 0 0	(2) 10,000 0 0
C. V. Buchan & Co., Sussex—	(1) 9,143 10 7	(2) 8,078 0 0
E. E. Jeavons & Co., Dudley Port—	(1) 8,845 9 8	(2) 8,275 2 9
C. S. Tomlinson, South Normanton—	(1) 8,923 16 5	(2) 7,874 2 0
† Ditto	(1) ——	(2) 7,874 2 0

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

DENYS, LTD. (182,996.) Registered July 10. Builders, decorators, and contractors, &c. Nominal capital £1,000.

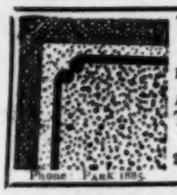
W. MARKES & CO., LTD. (182,524.) Registered June 16. 32, Waterloo-street, Birmingham. Plumbers and general brassfounders (now carried on in the name of W. Markes & Co., at Cambridge-street, Birmingham). Nominal capital, £6,000.

RIVINGTONS, LTD. (182,553.) Registered June 19. Builders, contractors, valuers, surveyors, house, estate and business agents. 17, Bedford-row, W.C. 1. Nominal capital, £1,000.

B. HORTON & SON, LTD. (182,820.) Registered July 1. 13, Loampit Vale, Lewisham Bridge, Lewisham, S.E. Timber merchants, fencing contractors and builders' merchants. Nominal capital, £20,000.

R. J. GODDARD & CO., LTD. (182,977.) Registered July 8. Great Northern Railway Depot, Caledonian-road, N.7. Asphalters, tar pavers, builders' merchants, &c. Nominal capital, £10,000.

RICHARDS, SMITH & CO., LTD. (183,004.) Registered July 10. 54, High-street, Chasetown, Stafford. Builders, plumbers, painting and decorating contractors and timber merchants. Nominal capital £1,000.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